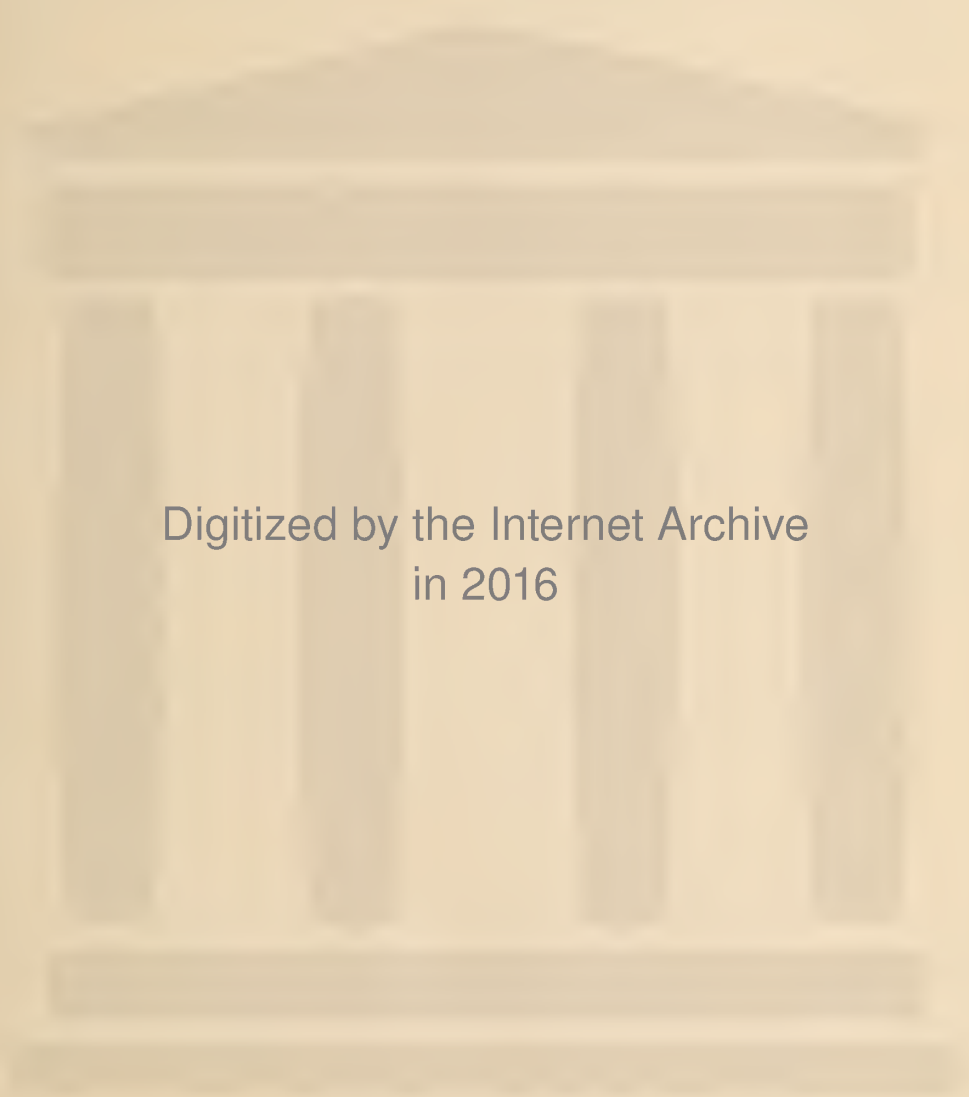


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VOLUME XXIX

McALESTER, OKLAHOMA, JANUARY, 1936

Number 1

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Tumors of the Nasal Accessory Sinuses *Adamantinoma, Dentigerous Cysts and Osteoma* *Report of Cases*

ARTHUR H. DAVIS, M.D., F.A.C.S.
TULSA

Adamantinoma: These tumors are slow growing, soft, central expansive growths and may be considered benign in that they do not metastasize. On the other hand, they may recur locally if not fully excised. The size is variable. Authorities agree that the lower molar region is the most common location.

The origin of these tumors is probably from the supernumerary remnants of the dental anlage. They produce deformity of the face or jaw.

The tumor may be monocystic or multilocular.

Symptoms: No pain as a rule is complained of. The patient reports to the doctor when deformity of face or jaw puts in its appearance.

Diagnosis: Adamantinoma must be differentiated from dentigerous cysts, carcinoma, sarcoma, osteoma and rare tumors such as myxoma, fibro-myxoma and fibroma. Biopsy is essential for correct diagnosis.

Treatment: The treatment is surgery, resection of the jaw is advocated by many. X-ray and radium are apparently of no value before surgery is done. Radium after operation is used as a prophylactic measure.

REPORT OF A CASE

Case 245. St. John's Hospital, Miss A. W., white, female, age twenty. Family

history: father, age forty-seven, living and well; mother, age forty-two, living and well; two brothers, living and well, none dead; sisters, none either living or dead.



PHOTOMICROGRAPH OF SECTION FROM
ADAMANTINOMA

(High Power of Cell Strands)

The epithelial cells are columnar against the stroma and become stellate toward the center of the cell nests. The stroma cells are embryonal in character. All cell nests are sharply demarcated from the stroma.

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Six years ago patient noticed a small swelling located in upper right jaw, no pain noticed; on advice of her dentist a tooth was extracted. This apparently cleared up the swelling until one year ago when she again noticed a recurrence of the old condition. The tumor increased in size until swelling over right side of face was marked. No history of previous illness, injury or operations. Radium application to swelling over face had been instituted before patient was referred to me.

Examination showed: A young female adult, thin, anaemic and highly nervous. There was some swelling over right side of face, a marked bulging into hard palate on the right side and some drainage was seen coming through a fistulous opening in the outer antral wall. Nasal examination showed complete blocking of right side of the nose. The left side was open. The x-ray report shows marked opacity



Lateral Roentgenogram Showing Tumor (Adamantinoma) in the Right Maxillary Antrum. Note Anterior Displacement.

over the right antrum. Other sinuses negative.

Eye examination was negative; Wasserman, negative.

The patient was sent to St. John's Hospital and on January 22, 1933, a Caldwell-Luc on the right maxillary was done. Upon entering the antrum it was found to be filled with a large spongy-like growth which was highly vascular. The mass was removed, the removal being attended by profuse hemorrhage. The outer antral wall was found to be necrotic. A large section of the gum tissue was found to be diseased and this was excised. The cavity was packed fairly snug with a long strip of vaseline gauze. A whole blood transfusion was given on the table, the patient's mother being the donor, and patient returned to her room in fair condition.

On February 7, 1933, sixteen days after the operation, seven needles 82½ m.g. radium were put in right antrum at 10:45 a. m., and removed at 1.30 p. m. The patient was discharged home on the following day.

Microscopic examination: Sections show a fibrous tissue stroma of a peculiar type, consisting of spindle-shaped cells all of one size and evenly distributed with an admixture of epithelial cell strands. The cell strands anastomose frequently and occasionally broaden with indications of lumina. The epithelial cells lying against the connective tissue are cylindrical and interval to these the cells become polygonal or stellate. In one area the epithelial strands seem to widen out and line a small cystic space. Other areas indicate papillary projections into cystic spaces which they fill completely. After careful search an occasional mitotic figure is seen in the stroma and rarely in the epithelium.

Diagnosis: Adamantinoma.

The patient was seen some few weeks ago. She is now working and there is no sign of a recurrence of the tumor.

* * *

DENTIGEROUS CYSTS

These tumors are classed as a form of a benign central tumor of the jaw, of epithelial origin and arising from the anlage



Lateral Roentgenogram Showing Dentigerous Cyst in Left Maxillary Antrum. Note Anterior Displacement.

of the teeth, and like the adamantinomas grow by expansion, producing deformity.

Dentigerous cysts must be differentiated from other benign and malignant conditions about the face and jaw and also from acute suppurative processes.

The treatment for dentigerous cysts of the antrum is removal of the cyst by means of the Caldwell-Luc operation.

REPORT OF A CASE

Case: St. John's Hospital, white female, aged nineteen, a dancer by profession. Family history is negative. One year previous, December 1, 1931, a small swelling was noticed over the left side of the face; it had slowly grown to attain its present size. No pain at any time had been noticed. On examination the entire left side of the face was displaced forward. There was some tenderness over the molar eminence. Examination of the nose showed the left side completely blocked, the nasal septum being pushed over into the right nostril; no fistulous openings or discharge seen.

General physical examination was negative. The blood Wasserman was negative.

X-ray examination showed a marked opacity over the entire left antrum.

The Caldwell-Luc operation was done on December 2, 1932. Upon opening the antrum a large amount of greenish yellow fluid was encountered; this was removed by suction; the wall of the cyst was peeled out; a large opening was made in the antrum through the nose and the incision over the canine fossa was closed.

Microscopic examination: In some sections a polypoid tissue without any evidence of malignancy; other sections showed what appeared to be some form of dentigerous cystic debris.

Diagnosis: Dentigerous cysts.

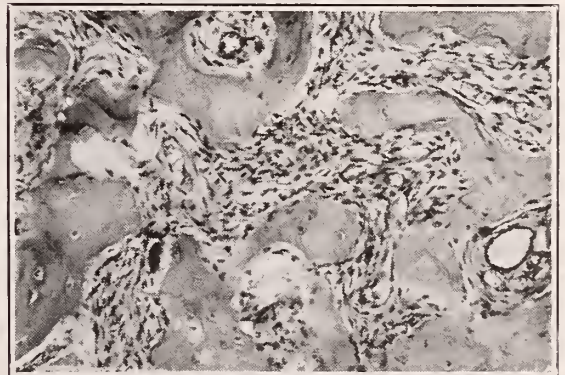
The patient was seen a short time ago and there is no sign of recurrence of the cyst.

* * *

OSTEOMA

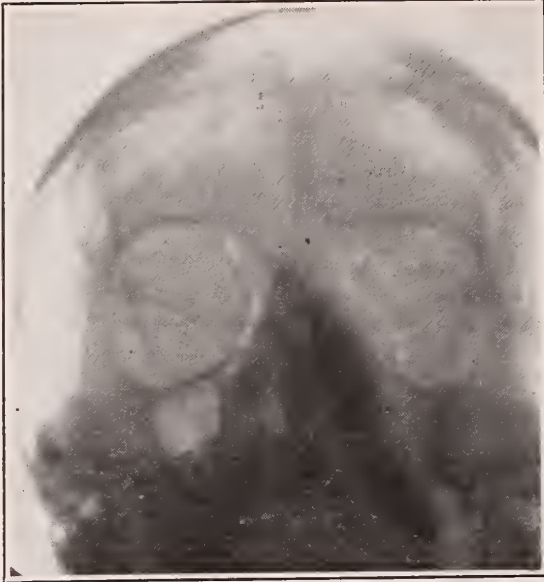
A hard, ivory-like tumor with a cancellous center. The etiology is unknown. Osteomata of the nasal accessory sinuses are not common. Carmody¹ has recently reviewed the literature and has given the total number of cases reported as one hundred thirty-nine, to which he has added six cases of his own making a total of one hundred forty-five. This included osteomata involving sinuses other than the frontals. These tumors are slow of growth and produce marked deformity. The symptoms depend upon the size and location of the mass.

The treatment is surgical removal.



PHOTOMICROGRAPH OF SECTION FROM OSTEOMA

High power field of tumor. A multinucleated osteoclast can be seen close to a piece of bone.



Postero-Anterior Roentgenogram Showing Osteoma in the Nasal Accessory Sinuses.

REPORT OF A CASE

Case 3131: St. John's Hospital, colored female, aged thirty-seven years, occupation, laundress. The family history is negative. The chief complaint was difficulty in breathing. This condition was first noticed in 1926 and had become progressively worse. No pain had been noticed at any time and no history of nasal hemorrhage was obtained. Two years previous, deformity of the face was noticed. The patient had had mumps, whooping cough and measles. Her appetite was poor and she had lost some weight.

The roentgen examination showed increased density over the left maxillary and the left ethmoid regions extending upward into the frontal sinus. The Wassermann was negative and the heart and lungs were found to be surgically competent.

Examination of nose: The left side of the nose was completely filled with a mass that extended from the vestibule, apparently, all the way to the naso-pharynx. The septum was pushed across midline into the right nostril. The teeth were in poor condition. The tonsils were large and reddened. Tenderness over the left maxillary and both frontal sinuses. Ears: membrana tympana apparently normal.

On October 1, 1932, lateral rhinotomy was performed under gas, ether anesthe-

ia. A hard bony tumor was found. The tumor filled not only the entire left nasal cavity but also the ethmoid. It extended up to the sphenoid bone and partially involved the frontal. The left maxillary was not completely filled. The meninges were not uncovered. The removal was attended with profuse hemorrhage. The operation was discontinued due to the patient's condition and one week later the remainder of the mass was removed under local anesthesia through the nose.

Pathologist's report: Microscopically the tumor consists of irregular lamellae of new formed bone. Numerous lacunae enclosing osteocytes are present in the bone giving the appearance of cartilage, but the osteoblasts and an occasional osteoclast found along the outer edges of the lamellae stamp the tissue as bone and not cartilage. In places the lamellae of bone do not appear to have been densely calcified, while in other regions the dense blue



Lateral Roentgenogram Showing Extension of Tumor (Osteoma) to Base Plate.

staining which hematoxylin suggests complete impregnation with calcium salts. No Haversian systems can be found.

Large medullary spaces separate the irregular bone trabeculae and are filled with a delicate cellular fibrous tissue. Many thin walled blood vessels are found in this medullary fibrous tissue. No microscopical signs of infection can be seen.

Diagnosis: Osteoma.

The patient was observed over a period of eight months following the operation; she was then dismissed and instructed to return at regular intervals for examination. One month after dismissal her employer informed me the patient died suddenly, apparently from lung hemorrhage. No autopsy was performed.

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Blood Dyscrasias in Children*

HUGH JETER, M.D.
OKLAHOMA CITY

Recent advances in the studies of the hemopoietic system have given us many classifications, many new terms descriptive of the blood findings, many new laboratory tests, and indeed many theories, and in some instances, discoveries. From all this we have that which is after all the ultimate aim—more satisfactory methods of treatment. It is true that the greatest advances in treatment have been made in the macrocytic types, such as Addison's anemia, the anemias of sprue, a certain anemia of pregnancy and anemia of *Dibothryocephalus latus* infestation. These never, or but rarely, occur in children. Therefore, we may be justified in the question: What is our present status in the management of blood dyscrasias in children?

It is the belief of the author that we must take proper steps to classify our cases according to etiology. Most cases, and particularly is this true of children, need no more treatment than the removal of the cause. To say we have a case of secondary anemia is therefore not satisfactory. The administration of iron, vitamins and the proper diet does bring about improvement, but not the cure which automatically results from the discovery and removal of the cause.

Time does not permit a detailed description of all of the findings in different blood diseases, but the following cases will illustrate some of the common types.

INFECTIONS

A baby two weeks old, seen through the courtesy of Doctor Tom Lowry, born in Oklahoma City and never out of the city or even out of the home, had a red count of one and one-half million, a very low hemoglobin, a low white count and many immature forms of red and white cells; a big spleen and all of the clinical signs of severe anemia. Tertian malaria plasmodia were found and Doctor Lowry reported later that after a short period of antimalarial treatment the baby appeared perfectly normal.

Frequently crippled children admitted to the hospital for correction of deformities develop malaria after many weeks. Most of these cases come from Southeastern Oklahoma. An attack in the form of a recurrence calls our attention to the condition. This has occurred in a number of cases, in midwinter. Plasmodia have been found in each instance. In chronic malaria we are usually not able to make a laboratory diagnosis but a careful history and the therapeutic test should in most cases yield a diagnosis.

*Read before the Section on Obstetrics and Pediatrics, Annual Meeting Oklahoma State Medical Association, Oklahoma City, May, 1935.

A child, eight years of age, recently examined, had mild diabetes and a reduction

of hemoglobin to fifty per cent without other important blood findings, was finally found to have an abscess at the apex of a tooth, the extraction of which resulted in an apparent cure of both conditions.

Many times chronic infections of tonsils, adenoids, middle ear, mastoid or other common infections give reduced hemoglobin without other important blood changes.

The ordinary infections of childhood are not only the most common cause of anemia, but also an important factor in many other so-called blood dyscrasias, such as different types of purpura, aplastic anemias, various neutropenias, some cases of splenomegaly with anemia, and even perhaps in some cases of leukemia.

Syphilis of childhood not infrequently causes anemia and in some instances a very severe form. In tuberculosis a moderate microcytic type of anemia with hypochromasia and a more or less characteristic lymphocytosis may be expected. Intestinal parasites should, in a fairly high percentage of cases, give in addition to the anemia, eosinophilia. It may require repeated careful blood smear examinations to yield this information.

Dietary: This type is certainly closely associated with the above because a child burdened by the toxemia of chronic infection usually does not eat properly. The present economic stress must in many instances give rise to diet deficiencies. Doctor W. M. Taylor has reported several cases of subclinical scurvy, as well as advanced scurvy, all of which had a moderate grade of hypochromic microcytic anemia.

Three years ago we saw a boy, six years old, with chronic bleeding spongy gums, anorexia, malnutrition, stunted growth, behavior problems, nervousness and a severe hypochromic type of anemia. The anemia was at first thought to be the result of chronic loss of blood but a rigid antiscorbutic diet brought about a cure.

Rickets may only need be mentioned to this group. There is no outstanding characteristics of this chlorotic type of anemia, but the blood chemistry showing deficiency of calcium or phosphorous will confirm the clinical diagnosis.

Diets deficient in calcium, iron and other minerals may lead to microcytic anemia. Clinical improvement is rapid with adequate iron therapy. There is also frequently a remarkable reticulocyte response. A co-existing avitaminosis may be treated by proper diet, but diet alone does not supply the demand for iron.

Nephritis, both acute and chronic, gives hypochromic types of anemia, of various grades. We have noted a distinct shift to the left in the Schilling count in several of these cases. One case had only a low grade hypochromic anemia but the blood smears showed such a definite shift to the left that we suggested a blood chemistry. The case proved to be one of uremia and died a few days later. It seems to be the toxic state which brings about destruction of erythrocytes and white cells as well.

Hemophilia: The history should make the diagnosis in this condition, but prolonged coagulation time confirms the diagnosis. Reports of treatment by the use of theelin, ovarian extract or some other female sex hormones have been very confusing. A case so treated and carefully observed in the Children's Hospital last year ultimately seemed not to have been benefited. Repeated small transfusions may give good results.

Purpura Hemorrhagica: A Chinese boy referred last year by Doctor L. J. Moorman, had a clinical purpura with infected tonsils. Blood findings were that of moderate anemia, normal clotting time, non-retractile clot, bleeding time of thirty minutes and thrombocytopenia. With rest, calcium gluconate, violet ray therapy, repeated alternating intramuscular and intravenous transfusions, he showed slow improvement. Tonsillectomy was performed later and the child had no recurrence of the purpura. Most of our cases have yielded to such management in the condition. One has continued to recur and we have recommended splenectomy. The removal of the spleen is usually followed by a dramatic cessation of the bleeding phenomena in cases of idiopathic thrombocytopenic purpura.

Chronic Hemolytic Jaundice: This represents another condition in which splenectomy has been of extreme value. The disease is very rare, the family history is

most important. A positive indirect van den Bergh reaction should be expected, and bile test of urine is negative.

Splenic Anemia (Banti's Disease): The large spleen, the co-existing anemia and the chronic process with liver involvement and ultimate esophageal hemorrhages makes the diagnosis. An occasional cure is reported by splenectomy in the early or preascitic stage. Such a case was operated in the Children's Hospital last year but has returned with hemorrhage and ascites and is not expected to live long. We believe there are many obscure cases of splenomegaly in children incorrectly diagnosed Banti's Disease.

Chemical Intoxication: The fretful, pale child with a moderate grade of anemia and stippled red cells who has been chewing the paint from his crib or toys and developed lead poisoning, is an illustration of true chemical intoxication. Children sometimes habitually chew bits of wallpaper and get arsenical intoxication.

We believe that the child who, in the winter is subjected to poorly ventilated rooms and gas heat from open burners, frequently is the victim of chronic intoxication, not only from carbon monoxide, but from other noxious fumes as well.

Agranulocytopenia: A condition in which there is a very fatal disturbance in the hemopoietic function, is thought by some, to be the result of administration of amidopyrine, either alone or in combination with a barbitol preparation. One investigator produced complete agranulocytopenia in one dog out of fourteen by the administration of allonal and amidopyrine.

It is well to bear in mind that x-ray therapy will give rise to anemia.

Leukemias: We must leave this most interesting group of diseases without comprehensive consideration, but may summarize their status by mentioning the following important features:

The etiology is not known. There is often an aleukemic phase during which the diagnosis may be very difficult. The most satisfactory form of treatment is irradiation.

Some reports indicate an increase in incidence. Certainly we are seeing more cases at the University and Crippled Children's Hospitals than previously.

In summarizing, we would again like to emphasize the importance of the proper diagnosis in blood diseases. The most satisfactory treatment, especially in children, is the removal of the cause. Careful and diligent study, as well as necessary laboratory procedures will in most cases lead to a satisfactory classification or diagnosis, and ultimately a cure, or in cases of the incurable types, more adequate management.

The Physical Characteristics of Diathermy and Short Wave Diathermy Machines

In their discussion of the two types of diathermy machines that are used at the present time to produce high frequency electric current which will pass through the tissues producing heat but no neuromuscular stimulation, Allan Hemingway and K. W. Stenstrom, Minneapolis (Journal A. M. A., November 2, 1935), refer to them as the spark gap diatherm machine and the vacuum tube diathermy machine. They assert that the newer method of heat therapy, namely, the short wave diathermy, is at present in an experimental stage. Much valuable research has been done to clarify the problems involved; at the same time there are in the literature some very confusing and misleading statements in regard to the merits of this form of therapy. For a good critical discussion they would recommend the recent article by Mortimer and Osborne. In particular, they would recommend that, owing to the lack of knowledge on many phases of this work and the indications of dangerous possibilities, the newer machines be used with the utmost caution. On the other hand, conventional diathermy is an old established form of therapy about which much is known that has proved to be of definite clinical value.

Recent Advances in Endocrinology: Relation to Interpretation and Understanding of Common Symptoms

According to David Preswick Barr, St. Louis (Journal A. M. A., November 30, 1935), advances in the study of glands of internal secretion cannot be judged solely or chiefly by the extent to which they lead to successful organotherapy but more by the profound influence they have on the understanding and interpretation of common symptoms. Consideration of their relation to hypertension, obesity and disturbances in carbohydrate metabolism is of especial importance because of the frequency of such manifestations, because they are often encountered in the same individual and because in certain striking instances they are directly attributable to pathologic changes in the hypophysis or the adrenals. Although participation of these and other glands of internal secretion must be suspected in many cases of high blood pressure, obesity and diabetes, caution is necessary lest the newer knowledge be applied prematurely and too extensively in surgical and radiologic treatment.

DIARRHEAS*

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Though our hospital and private case records show diarrheas are not as frequent as formerly, it is sufficiently so to warrant the most careful attention of the pediatrician and general physician. Much very valuable information has recently been added to its management.

Diarrhea is a symptom and many factors may contribute. Marriott, Hartmann and Senn, on Observations on the Nature and Treatment of Diarrhea and the Associated Systemic Disturbances, who approach the subject in a very comprehensive introduction, have this to say: "The numerous discussions as to whether infantile diarrhea is due primarily to abnormal chemical composition of the food, to nutritional disturbances, to enteral infections or to parenteral infections have made it evident that there is no one cause of the condition, but that it may be due to any one or more of the factors mentioned, either alone or in combination with other factors. It has also become apparent that the severe toxic symptoms, the so-called 'Alimentary intoxication,' are the secondary results of disturbance in the chemical equilibrium of the body brought about as the result of loss of water, salts and organic material by the way of the gastro-intestinal tract and that the development of the clinical picture of intoxication depends more upon the degree and severity of the diarrhea than upon the nature of the underlying cause. Any severe diarrhea, whether occurring as the result of enteral or parenteral infection, or other causes, may be associated with the development of symptoms of 'intoxication.' The picture may, of course, be complicated by the direct effects of any infection which is present."

Briefly, the most frequent of the active factors in the production of simple diarrheas are:

1. Improper feeding, usually artificial and with a possible contamination.
2. Infections parenteral or enteral, including B. Dys., etc.
3. Heat and humidity in summer months.
4. Allergy.

Clinical picture of acute simple diarrheas not due to a specific intestinal infection is a varied one. It ranges in severity from the simple fermentative type which responds promptly to dietary management of that associated with intestinal intoxication with or without an acidosis and diminished kidney function. In many cases the only clinical signs of acute intestinal indigestion are those demonstrated by the stools. We may, especially during the very hot months, when humidity is extreme, see cases in which the dehydration is rapid and extreme; in which the mineral balance of the body is disturbed, the prostration marked, with renal function disturbance, marking the results of an intestinal intoxication. Dehydration is clearly present, marked by its rapid loss of weight, hot dry skin, etc. In this severe type of diarrhea, we more frequently see the clinical manifestations of acidosis, namely hyperpneic breathing with a scanty urine output. It is safe to base a diagnosis of acidosis on their clinical evidence even when laboratory assistance is not available.

MANAGEMENT OF DIARRHEAS IN GENERAL

I. Preventive Treatment: Much can be done by preventive measures. Careful supervision of infants and advice to mothers relative to feeding. Office examinations should be supplemented by an effort to impart to the mother such advice and much of this should be outlined by specific instructions in writing. She should report promptly, evidence of loose stools, vomiting or refusal of food. Artificially fed infants during the hot months should

*Read before the Pediatric Section, Annual Meeting Oklahoma State Medical Association, Oklahoma City, May, 1935.

have boiled milk or evaporated unsweetened milk.

II. *Treatment of vomiting, which may precede or accompany diarrhea:* The correction of the cause is usually all that is needed after which plain water is substituted for a few hours. If persistent, gastric lavage followed by small amounts of plain water by mouth or fluid left in the stomach after lavage. If fever is present give teaspoon doses of iced milk of magnesia, every half hour, for three to five doses, because the small intestines are usually involved by way of retention, the magnesia therapy aiding free elimination. Colonic flushing should be employed, if seen early, for the same purpose.

III. *Administration of fluids is the most important feature of treatment:* So much has been said of the parenteral administration of fluids that one may lose sight of the fact that many infants and young children may be supplied with sufficient water by mouth alone, if there be no vomiting. It should be given frequently in small amounts, by dropper, spoon, feeder or bottle for twelve to twenty-four hours. Diligence on part of the attendant must be demanded. If dehydration is marked fluids must also be given parentally. Normal saline 0.9 per cent or Ringers solution intraperitoneally, provided distention is not too great and given in amounts sufficient to indicate only moderate filling of the peritoneal cavity. Normal saline and glucose six per cent solution may be given subcutaneously. Glucose five per cent in normal saline or with Hartmann's solution intravenously, or three per cent in saline for continuous venoclysis. Glucose should not be given intraperitoneally as it may produce severe reactions. Amount of any fluids given intravenously within twenty-four hours may be from five to ten c.c. for each pound by weight. Evidence of too much fluids is shown by slow absorption of fluids and evidence of edema over feet and hands. Rountree speaking of the toxicity of water observes that when ingested in excess of the excretory ability of the organism, it leads to water intoxication. This must be considered a possibility. Whole blood should not be administered until after fluid therapy has restored the fluid content of the blood. "Transfusion

tends to prevent secondary nutritional edema; may furnish some bacterial antibodies, particularly the B. Coli; furnishes R. B. C's., which are capable of functioning normally and tends to prevent anemia after the dehydration has been overcome." (Marriott-Hartman—Diarrhea; Jr. of Ped. July, 1933, p. 181). The report of continuous intravenous therapy in cases of intestinal intoxication with extreme dehydration, in the hands of those most experienced, seems promising. Reports from the University of Toronto—A. Brown and Tisdall—Later by Ashby and Moore, Jr. of Ped. Jan., 1935, seem promising in extremely toxic cases. The latter's simplified technique seemingly has much to commend this plan of fluid therapy. In their procedure they recommend the small veins of the scalp over the large veins, as the site of choice.

IV. *Rest of the gastro-intestinal tract:* With the lowered digestive capacity of the infant, in diarrhea, the choice of food becomes a problem. The feeding problem is essentially the same whether it be a simple diarrhea or bacillary dysentery. After the initial twelve to twenty-four hours of the withholding of food, skim lactic acid milk, with or without sugar; two to four ounces every four to six hours may be given. If acid milk is refused by older children give skim boiled milk with or without sugar. Continue until bowels check in frequency, change in color, then cane sugar up to one ounce in daily formulae. If sugar is not tolerated, as shown by abdominal distention or green acid stools and an increase in frequency, Casec or dried protein milk may be added in the proportions, two tablespoons to each four ounces of diluted formulae, later adding cane sugar. Sugar must not be withheld longer than necessary. Increase in amount to required cal. as rapidly as possible, remembering the child's inclination is a good guide as to the amount taken if the components of the formulae are suitable for his lowered digestive capacity. In infants who refuse food, it may be necessary to feed by gavage and additional water also may be supplied at the same time.

Drug treatment has but slight value. Generally cathartics are contra-indicated. Castor oil given early when there is evidence of undigested food in the bowel is

good therapy. Paregoric in appropriate dosage to relieve pain, quiet active peristalsis and tenesmus, and secure rest is most useful in dysenteric type.

SUMMARY

Preventive measures:

- a. Careful supervision of feeding during the hot months of the year.
- b. Specific instruction to mothers concerning the danger signals, that they may be reported before severe damage has been done locally to the mucosa of the gastro-intestinal tract.
- c. Starvation period and judicial restriction of food in early stage of gastro-intestinal disturbance, even of mild nature. Water by mouth when possible must be insisted upon.

Other measures:

1. Diligence in supplying fluids, by

mouth if possible; if not by parenteral administration of suitable fluids for maintenance of mineral balance, prevention of dehydration, disturbance of kidney function and acidosis.

2. In severe cases focal infection or other contributing factors should be sought and removed.
3. Continuous intravenous therapy offers hope for many moribund cases since the technique is made simpler. This therapy is indicated in any condition associated with severe dehydration, though this is only a part of the scheme of treatment which must be instituted for the patient. Starvation, medication, removal of foci of infection, diet and other therapy of choice must be provided.

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The Non-Specific Management of the Cancer Patient*

T. GRIER MILLER, M.D.
 PHILADELPHIA

The title of this paper suggests that there are certain measures for the treatment of cancer which may be regarded as "specific." If we use the word in a strict sense that, of course, is incorrect. Yet today, thanks to surgery and the recent developments in x-ray and radium therapy, we do have, for almost every variety of malignant disease, some form of treatment that offers a reasonable prospect of cure, and that in consequence must be employed as promptly and as hopefully as if truly specific. One thinks, for instance, of the use of x-ray and radium therapy in skin cancer and in carcinoma of the cervix and of surgical excision in cancer of

the breast and in various malignant lesions of the digestive tract. After all, diphtheria antitoxin, though looked upon as a specific form of therapy, does not cure every case of diphtheria; neither do mercury and the arsphenamines cure every case of syphilis. In an almost equal sense one is justified in thinking of certain forms of treatment for cancer as specific.

Important as it is, however, to consider these more special forms of therapy first and to resort to them with resolution and courage, yet at the same time I wish to emphasize that the physician's duty to the patient with cancer is not ended when he has brought to bear on the case all the so-called specific measures that science has to offer: radium and x-ray therapy,

*Read before the Sixth Annual Fall Clinical Conference of the Oklahoma City Clinical Society, November 6, 1935.

*From the Medical Clinic, University of Pennsylvania Hospital.

the electric cautery and surgery. Some of the patients, it is true, have their disease eradicated by such procedures, but others secure only an amelioration of symptoms, a postponement of death or no relief whatever. Irrespective of the effect of therapy on the lesion itself, many patients have their subsequent lives wrecked by the mental shock incident to knowledge of the nature of the process, by the ordeal of therapy, or by the mutilation subsequent upon treatment. Every cancer patient, consequently, deserves from his medical attendants not only the recognized specific forms of therapy applicable to his case but, in addition, such general and continued medical management as shall insure to him as an individual all the comfort, support and encouragement that the profession can give. Such aid lies as much in the art of medicine as in its science.

The art of medicine is grounded primarily in an understanding of human nature and is conditioned by an appreciation of the whole personality of the particular individual under treatment. It requires, on the part of the physician, a wide experience with people, a certain capacity, more often natural than acquired, to understand their mental and emotional reactions and an ability intelligently to manage them. It involves usually some knowledge of the particular patient's family and social background and of the patient's temperament or psychological makeup.

The physician's relationship with the patient must be a personal one with him as an individual and not merely with certain affected segments of his body. This often has already been developed and is most easily maintained by the family physician who has known the patient for a long time, has had other medical experiences with him and has previously gained his complete confidence. Some physicians, however, by their personality, by their ready grasp and sympathetic understanding of human situations and by their professional standing in the community, even when they have not previously known the patient, are able promptly to establish such a personal relationship with him.

No matter who the cancer patient's medical adviser may be, he must be prepared, when he assumes formal charge of the case, to see it through to the end. He must have a broad knowledge of the disease; be not unduly prejudiced in favor of any one specific form of therapy; be familiar with, or at least ready to learn about, all the justifiable methods of treatment; be able, when proper indications arise and without losing a supervising direction of the case, tactfully to pass his patient from the hands of one special therapist to those of another, and always in the end be prepared to handle the situation alone, perhaps without any special aids other than those of his own medical armamentarium and of his own personality.

Such supervision by some one physician of every patient, no matter what his disease and no matter how many other therapists may be involved in the case, is essential in all medical practice. Any system of rendering medical aid to the public that disregards the personal factor is destined to failure. Under any other system the quacks and cultists will take over much of the physician's work, for they, as Roger Lee has said, "shrewdly capitalize personality and personal relations." The significant criticism of such pseudo-physicians is that they overlook entirely the scientific aspects of therapy, which, after all, in cancer at least, afford the only hope of cure.

The art and the science of medicine cannot be divorced, and I trust that in what further I have to say about the management of the cancer patient as an individual it will be appreciated that no specific scientific measures proved of value in the treatment of his disease are being forgotten. To do otherwise would be charlatantry.

What then are the duties of the physician to whom the patient with cancer entrusts his case, be he general practitioner, internist, surgeon or so-called specialist?

His first obligation is to decide at once whether or not he is equipped to bring to bear on the case, through his own efforts and with the assistance of his colleagues, all that the science and the art of medicine have to offer for the ameliora-

tion or cure of the patient and of his disease. If he concludes that for some reason he is not in a position to do that he should at once put the patient in the hands of a physician competent to direct and supervise all the procedures that may be indicated in the total management of the case. Such a physician, as the medical adviser, need not himself be a surgeon, a radiologist or even an internist, but he must be able to cooperate with persons highly specialized in the specific treatment of cancer, so that no procedure known to be of value shall be neglected. I shall not attempt to review the particular forms of treatment, specific or otherwise, which are available today for the various types of cancer: they are familiar to all of you. My further remarks apply, therefore, only to the non-specific things which devolve usually upon the general practitioner or internist in ultimate charge of the case.

First of all, if he has not already done so, it is essential, as previously indicated, that the physician win the complete confidence of his patient. That can be accomplished only when the patient is convinced that his adviser thoroughly understands the case, will spare no effort to make available to him for its cure every known therapeutic measure and will likewise spare him every procedure that may impair his chances of recovery. In all instances, whether the physician has previously known the patient or not, this is most readily secured by a thorough-going study of the case, including a consideration of all the historical facts and all the things the physician can learn by a meticulous physical examination and by special clinical investigations. Such an approach to the problem alone will often promptly arouse in the patient a feeling of security that can easily be maintained by continued re-examinations and attention to minor disturbances as they arise.

The next problem before the attending physician relates to the things he should tell the patient about his case. Insofar as possible it is wise to postpone any definite statement until a thorough study has been made and the nature of the disease has been finally established. That usually affords sufficient time to evaluate the psychological makeup of the patient and to

win his confidence. Fortunately in many hopeless cases for which no special therapy is available, the patient, being intelligent and thoroughly understanding the situation, asks no questions and wants no explanation. When, on the other hand, he does request information about his condition a full statement often may be postponed from time to time until death supervenes or until he loses the capacity to grasp the significance of what he is told. Again, in desperate cases, one may be able to tell the patient only of his own uncertainty as to the exact diagnosis, mentioning, if necessary, the possibility of malignancy but always at the same time holding out a hope in some less serious diagnosis. To do this is often not to be untruthful, for errors in diagnosis, especially of internal cancer, and even by the most expert, are sufficiently frequent to justify at least an equivocal statement. Under such circumstances, however, the patient's family should always be told of the real suspicion of cancer.

In other instances the diagnosis is quite clear and the patient's thorough cooperation in the proper management of his case can be secured only by a frank statement of the situation. Under those conditions the physician is never justified in failing to reveal his honest opinion of the case, but at the same time he should carefully point out, and be prepared to substantiate, by data and by the opinions of others, his hope of cure. Such cure, on the basis of certain types of therapy now fully understood, can be assured to the patient in many forms of cancer, while in others only a reasonable expectation of cure can be entertained. Even in the case that may at first seem hopeless some form of encouragement can and should always be given, even if only on the basis that the diagnosis may be in error or that his may be one of the unusual but lucky cases that will respond to some special form of therapy.

This leads me to say that every patient with cancer should be actively treated. Those receiving specific therapy should at the same time be given attention for minor ailments and treatment directed toward an improvement of their general physical condition. Few, if any, cancer

patients are encountered who are not suffering from some secondary or associated disturbance: weight loss, anemia, general weakness, cough, dyspnoea, anorexia, intestinal indigestion or what not. Even when no such disturbances are discovered it is almost invariably helpful to prescribe a specific hygienic program, including periods of rest, of mild exercise and of entertainment, and carefully to supervise the diet. On such a regimen alone many patients promptly will show improvement and be encouraged to cooperate more completely in the specific therapeutic procedures.

When specific measures cannot be considered or have been employed to the limit, it is all the more necessary to outline a routine of life conducive to physical and mental well being. This may involve an entire change of environment, a return to routine work or even the development of new hobbies and life activities.

It is unnecessary to outline the special measures indicated in the presence of impaired functioning of the digestive, cardiovascular, renal, or nervous systems. Anemia, however, deserves special mention, for it is frequently looked upon as an essential part of the malignant process and given insufficient attention. It should be treated actively: by iron, liver extract, sometimes by transfusion, as well as by hygienic measures and an adequate and varied diet. The restoration of a normal blood picture often brings about decided improvement in the general physical condition of the patient and in his morale. Thus it contributes, even if not to a prolongation of his life, to his comfort and peace of mind.

Likewise weakness, weight loss and sleeplessness often receive less attention than they deserve: these conditions may frequently be brought under control. Particularly important is it that the patient secure regular periods of sleep: this may necessitate use of the bromides, the barbiturates or even the opiates; sometimes it may be secured by such simple measures as a warm bath or a hot drink at bedtime. Under all circumstances, however, it is as important as the relief of pain, and it justifies the use of any effective remedy.

Loss of weight in cancer may be beyond

control, especially when the digestive tract is involved, but conscientious efforts to prevent it or to overcome it are sometimes rewarded by unexpected results. A cut down in activity or a few intermediate feedings daily not infrequently are sufficient to alter a downward weight curve. The various constituents of the diet, including its vitamin content, must be carefully watched, and especially the intake of sufficient fluids. In gastric cancer, even when considerable pyloric stenosis is present, lavage of the stomach each morning sometimes improves the appetite and allows the digestion and absorption of surprising amounts of food.

These efforts to increase the weight and to induce sleep, if successful, not uncommonly lead to a feeling of greater strength on the part of the patient that is most encouraging. In addition, some of the milder general tonics, such as nux vomica, arsenic, amonia or even whisky may be very helpful. If cardiac decompensation or irregularity is present a little digitalis or strophanthus may lead to a feeling of increased vigor; if edema is present a diuretic or a reduction in the fluid intake or some variation in the diet may be the most effective remedy.

Finally, and perhaps as one of the most important aspects of the general care of the cancer patient, one must consider the relief of pain. Fortunately today pain can usually be controlled, either by the use of drugs or by such surgical procedures as nerve or cord section. Obvious, however, as it would seem to be that, in the advanced and inoperable case, pain should be relieved at all costs, it is not, in my experience, general medical practice. This often results from uncertainty in diagnosis and prognosis, and this is an additional reason for extensive investigation and careful diagnosis in every case. When the prognosis is hopeless, nothing is to be gained by sparing such drugs as are required to give the patient comfort and to relieve his fears: habit formation does not have to be considered. When the case is not far advanced, severe pain is unusual or of brief duration and ordinarily can be controlled by some of the specific forms of therapy or by the temporary exhibition of sedatives. Under all circumstances,

however, the patient should not be allowed to suffer needlessly. Often this can be prevented by the use of the milder sedatives, such as the bromides, chloral or the salicylates, but when such drugs are not effective, the opium derivatives, such as codein, morphia or pantopon, should not be withheld. If the opiates are used discriminatingly, only when needed and in the smallest doses that will be effective, the total daily amount is usually small. Dilaudid, of the newer opium preparations, seems very promising in that it less frequently than morphia has untoward side actions, acts quickly when given subcutaneously or by mouth, and for slower and more prolonged action can be administered per rectum. In the inoperable cases it seems that small doses of morphia, pantopon or dilaudid frequently repeated, are more effective than larger doses less frequently administered. For terminal cases in which partial narcosis is desirable, I have found sodium amytal, and especially dial, most helpful.

I have had little personal experience with the colloidal gold preparations in the palliative treatment of cancer but many physicians believe that collodaurum, given orally or intravenously, not only relieves the pain of inoperable carcinoma but also has a tonic effect on the blood forming organs, increases appetite and weight, and tends to retard growth of the tumor.

Warren, of Rochester, New York, has been interested in the use of artificial fever in the treatment of hopeless cases of cancer, and recently has reported on thirty-two cases so treated, some of them undoubtedly having been greatly benefited.

I dare not conclude this presentation without reference to the importance of nursing care in the management of the patient with hopeless cancer. Whether a trained nurse, a practical nurse or some member of the family is immediately in charge of the patient she occupies a strategic position and should be acquainted with the true nature of the case in order thoroughly to cooperate with the physician. Upon her, almost more than upon the physician himself, the patient relies for support of his morale, for help in meeting the mental crises that arise, for

even an explanation of symptoms. If tactful she can successfully meet all these demands, but can do so intelligently only if experienced in such cases or carefully instructed by the physician. Only too often the medical attendant relies upon the nurse's judgment to handle such situations without carefully instructing her as to his viewpoint about the case and the methods by which she can assist him. Many patients have been carried through the most difficult of their problems by a cheerful, intelligent, tactful nurse, who perhaps never gives any real information but satisfies the patient's enquiries by clever evasion, reference to the doctor or prompt attention to some minor ailment. To such nurses, and they are not all graduates of training schools or state licenciates, the physician and the cancer patient owe a debt of gratitude.

Thus I have attempted very broadly to outline some of the non-specific measures of use in the care of the patient with cancer, whether at the same time he is receiving specific therapy or has passed beyond the stage in which such procedures have anything to offer. I have called attention to the necessity of developing in the patient a profound sense of confidence in his physician, which shall be justified by the latter's activity in the case, and have referred to the importance of certain procedures that tend to bolster up the morale of the patient and to relieve his secondary or associated symptoms. Second only to the exhibition of the so-called "specific" forms of therapy, the aim in medical management should be to keep the patient encouraged, hopeful and happy. Pleasant surroundings, cheerful attendants and diversions of all sorts are in many instances more efficacious in this respect than all the other available remedies.

The Therapy of Injuries to Large Blood Vessels

Bernard Fantus, in collaboration with Raymond W. McNealy, Chicago (Journal A. M. A., November 30, 1935), discusses the therapy of injuries to large blood vessels as it is expressed by the attending staff of the Cook County Hospital. In injuries involving the large vessels, dramatic onset and rapid development of the clinical climax which places the patient's life or limb in jeopardy demands immediate, decisive and correct treatment. The indications which are discussed, are: hemostasis, care of complicating injuries, maintenance of life, maintenance of distal circulation and appropriate after-care.

STERILITY*

P. N. CHARBONNET, M.D.

TULSA

One of the strongest links in the chain binding Obstetrics and Gynecology is the condition of sterility. For many years efforts have been made, at various times, to divorce Gynecology from Obstetrics; Gynecology from Surgery. The consensus remains that Gynecology and Obstetrics should be more closely associated than any other two branches of medicine. The very poor results obtained by the majority of general surgeons, who have no knowledge of Obstetrics, in treating Gynecological conditions, is one of the strongest arguments in favor of this union.

Sterility is a disease. It is a disease which brings to the office of the Gynecologist, almost, and this sounds ludicrous, as many seeking relief for this condition, as those who come for the purpose of obtaining contraceptive information. The number of households that have been made miserable by the inability of the parents to procreate is attested by the large numbers of foundlings taken out for adoption, from the various institutions serving that purpose.

Sterility, as any other disease, is one that can and should best be approached from a standpoint of prevention rather than of cure. This care should begin in adolescence, by the teaching of the principles of health and hygiene to the future fathers and mothers of the nation. Young men and women approaching marriage should be told something of its duties and its functions. Treatment of adolescent girls should be carried on with a view to forestalling genital hypoplasia. Efforts should be made to eradicate venereal diseases. Instructions should be given, not only when indicated, but when asked for, concerning the use of harmless forms of contraception. This latter is very important because one cannot be so blind or so stupid as not to realize that a large percentage of mar-

ried couples practice contraception in one form or another during various periods of their lives; and that improper harmful methods of contraception can and do predispose to a high incidence of sterility.

S. R. Meaker, in his clinic in Boston, has done more towards shedding light on the obscurity, formerly clouding this subject, than any other single individual. He finds that absolute causes occur in about thirty per cent of clinical cases of sterility. In the remaining seventy per cent this is due not to a single abnormality but to a multiplicity of factors any one of which could be of importance.

It has been demonstrated that about thirty per cent of all cases are due to the male. Local genital factors play a comparatively small part. The most common causes are: ignorance; impotence; excessive coitus; absence, scarcity of or abnormality of the spermatazoa. There are possibly many other causative factors in the male, as diet, alcoholic excesses, endocrine disturbances, etc. It is not my purpose to delve more fully into the aspects of this subject, but merely to point out that in all cases of sterility the examination should begin, in my opinion, with the male and this to be done preferably by a competent Urologist.

In the female, excluding some of the rarer conditions, the most common contributory factors to infertility are: genital hypoplasia; diseases of the cervix, producing abnormal changes in the secretions of this organ; tubal obstruction; and mechanical impediments to ovulation.

The first of these factors, female genital hypoplasia, has in the past yielded rather disappointing results as to treatment. It is possible that the newer developments in endocrine therapy may prove of assistance in the relief of these cases. At the present time the best results are obtained in the field of prevention rather than cure.

*Read before the Section on Obstetrics and Pediatrics, Annual Meeting, Oklahoma City, May, 14, 1935.

Abnormalities of the cervix have practically all their origin in infections. The old forms of operations as advocated by Dudley, Schroeder, or Sturndorf, have practically been abandoned in favor of treatment by the electric cautery; or in the more extensive conditions by conization, with the high frequency current as advocated by Hyams.

Some individuals have disparaged the latter forms of treatment, claiming that they would result in stricture of the cervix, which would in turn render labor difficult. I have delivered many patients, in whom one or other of the above methods had been used, and found evidence of stricture in only a very few; these patients, specifically, giving a history of repeated cauterizations. It has been my experience that those individuals, in whom the cauterization is done too slowly, with extensive searing of the tissues, are those in which scar tissue is produced. Too frequent repetitions of cauterizations give the same result. It is better, therefore, when the disease of the cervix is extensive, to do a conization by the Hyams method rather than repeated cauterizations.

There has been a great deal of controversy as to the part played by backward displacements of the uterus as a cause of sterility. Unless these displacements are associated with some degree of genital hypoplasia or other abnormalities, I am compelled to concur in the opinions of those who do not believe that these malpositions are a cause of sterility. I do believe, however, that retro-displacements, uncorrected in the early months of pregnancy by exercises, pessary or a combination of these methods, predispose to abortion.

Probably the most valuable contribution made in recent years to the study and therapeutics of sterility, has been tubal insufflation, as originally introduced by I. C. Rubin. In a series of five hundred sixty cases of sterility using his original technique, I have found that forty per cent showed closed tubes; and that of these, twenty per cent became permeable.

It is not intended here to repeat, but the essentials of Rubin's method. I use carbon dioxide gas for inflation of the tubes. If these show evidence of being closed, I fol-

low this after the next succeeding menstruation, by an injection of Lipiodol, with x-ray photographs; this in order to determine the point of obstruction. If the latter shows that one or both tubes are closed at, or near, the uterine insertion, future treatment, by insufflation, is useless. Should the closure be in the fimbriated portion, the prognosis as to restoring permeability by repeated insufflations or by operation is fairly good.

My preference to the gas insufflation, over the oil, is, that use of the former is simpler, less painful, and far less dangerous. Numerous reports of oil being forced into the circulation, oil embolism, etc., as compared to the very small number of accidents reported following air injections, strengthen my opinion. I have had occasion to open the abdomen, in several cases, in from several months to over a year after oil injections had been used, and found evidence of peritoneal irritation, encapsulated globules of oil and adhesions. Some individuals are now using Neo-Iopax instead of oil, and claim that it is not irritating. My experience with it has been limited, but the assumption appears to be correct.

After the determination that both tubes are closed, the question arises as to the advisability of operation. This has been the subject of arguments for many years. Many operators have published series of cases with conflicting results. I believe the consensus of opinion is now that in those cases in whom adhesions about the fimbriated extremity of the tube fail to yield to repeated injections of air by the Rubin method, operation is admissible as yielding a fair prognosis.

Numerous operations have been devised, when it was found that the obstruction was present in the interstitial, or isthmal portions of the tubes. In a recent paper, Bethel Solomons publishes the result of three hundred sixty-six cases of tubal resection. In this series thirty, or 8.2 per cent, became pregnant, and ninety-eight, or 18.5 per cent, either became pregnant or showed evidence of tubal patency, after operation. In my personal series of thirty-one cases, five per cent show patent tubes after operation, but pregnancy has not occurred in a single case.

It is my opinion, that, unless the patient is fully advised of the facts of the comparatively small percentage of pregnancies that follow these operations, even if the tubes become permeable, and in spite of these, for one reason or another, decides of her own free will upon an operation, that operations on the tubes, for the purposes alone of relieving sterility are, at the present time, unjustifiable.

With the recent studies of Frank, Novak and others, the endocrine aspects of sterility have assumed great importance. Novak's studies, revealing the rather startling fact that menstruation can occur regularly, in a certain proportion of women without the occurrence of ovulation, throws light on some of our heretofore unexplained sterilities. He believes that by studying the endometrium just before an expected menstrual flow, it can be determined whether or not the epithelium exhibits evidences of secretory activity. If it does, it denotes the presence of progesterin, presupposes a corpus luteum, and therefore that ovulation has taken place. He has recently devised an ingenious hollow curette for use with suction, as an aid to securing these specimens without the necessity of hospitalization or anaesthesia.

The condition of amenorrhea associated with sterility has been found to yield, in a certain number of cases, to treatment with the various hormone of the anterior pituitary gland, although, on the whole the results have been disappointing. The various hormones have been marketed under a galaxy of names, and with extravagant claims based on animal experimentations. The results have not justified these assertions. The only product that so far appears to have very definite favorable effects, in the treatment of sterility, is thyroid extract; and this appears to be of benefit, even in those cases in whom the Basal Metabolism is normal. It is hoped that continued research in this field will aid us in obtaining more potent and reliable extracts.

Uterine fibroids are of importance as a possible cause of sterility. They occur in a surprising number of comparatively young women. In properly selected cases taking into consideration the type of tumor, its

size and location, Myomectomy has been followed by a high percentage of pregnancies.

SUMMARY AND CONCLUSIONS

1. Sterility is a disease which can be prevented by proper instruction in adolescent years.
2. A large percentage of sterilities originate in the male and treatment of the condition should begin with, or at least include that sex. This part of the examination is best conducted by a competent Urologist.
3. After prevention, the best results to date, in the treatment of sterility, have been obtained by the elimination of infections of the cervix and the opening of the closed tubes by air insufflation.
4. Hormone therapy, with the exception of those cases yielding to thyroid extracts, has been disappointing.
5. Salpingostomy yields fairly good results in the fimbriated end occlusions; very poor results when this exists in other portions of the tubes. The decision, for this type of operation, should be left to the patient after full explanation of the possible dangers and of the comparatively small percentage of pregnancies that occur as an end result.

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DISCUSSION

Dr. Walter W. Wells: I agree with Dr. Charbonnet on the early education of the young people so they may avoid sterile marriages.

We have had more applications the last few years for adoption of babies at the Home of Redeeming Love than ever before. At times there has been as many as one hundred and fifty on the waiting list. Many of these people call upon their physicians for an examination before adopting a baby.

We should have a regular definite outline for the examination of those cases. Certainly the woman should have a thorough physical and gynecological examination. If she is found to be an absolute case of sterility the examination

ends here, but if on the other hand she is found to be a relative case we can continue the examination and the patient is instructed to return to the office within one and not more than two hours after coitus for the Huhner Test, which is very easy to make in your office. The patient is placed on the table, a speculum is placed in the vagina, and with a syringe a small amount of fluid is aspirated from the posterior cervical fornix. This specimen is examined first under the low power, then under the high power. There should be at least twenty-five or more live, active, well formed spermatozoa in the high power field. If the test is negative I repeat it in a few days; if this test is also negative I ask for a condom specimen from the husband which is examined in the same manner. If the specimen has few or no sperm present the husband is referred to an Urologist for examination and treatment.

Dr. Charbonnet thinks that about one-third of the causes of sterility is due to the male, therefore we should eliminate him first.

Now in regard to the examination of the woman. As you all know the greatest cause of sterility is blocking of the tubes and next to that is an endocervicitis. If endocervicitis is present there will be evidence of it as a cervical plug of thick mucous or ulceration and erosion. For the test of the tubes I prefer the Rubin Test made about seven days after menstruation. If the carbon dioxide fails to go through, which will be evident by the pressure going as high as 150 to 200 mm., the test is repeated at least three times, then I inject lipiodol and take a roentgen ray picture to determine whether the tubes are open or closed. This sometimes acts as a therapeutic measure by keeping the tubes open for a short period.

CHRONIC GLAUCOMA*

M. K. THOMPSON, M.D.
MUSKOGEE

Chronic Glaucoma, next to accident and trachoma, is producing more blindness in adults than any other conditions. The medical profession (including the Ophthalmologist) has striven from the beginning of time to stamp out disease, to find causes and remedy them as much as possible unselfishly, thus have labored for the benefit of mankind giving not only their means, but health and even lives to accomplish these worthy ends—and for this reason the profession has been called a noble profession or calling. With years of hard study of all the fundamentals and many more years of special training, with the expenditure of thousands of dollars in preparation of mind, body and soul, to work for the betterment of mankind. As a special branch of this trained army of experts with some special training in a

particular branch of the healing art the Ophthalmologist is striving to prevent blindness and bringing about cures and restoration to sight those, which otherwise are doomed to blindness without some skilled interference. You will recall that only a few years ago—almost within our memory—a large per cent of all blindness and even a much smaller percentage, was produced by Ophthalmia Neonatorum due to a campaign started by Crede in 1884. By the continued teachings of the physicians and through legislation this cause of blindness is becoming minimized. Hereditary diseases, syphilis, too, are being legislated against through the efforts of the physicians and ophthalmologist. Vigorous treatment by ophthalmologist, education, and legislation are also making great headway toward checking that dreaded eye disease—Trachoma—which in certain section of the country is annually producing much blindness.

*Read before the Eye, Ear, Nose and Throat Section, Annual Meeting, Oklahoma State Medical Association, Oklahoma City, May, 1935.

The many industrial eye injuries are becoming more rare as these industries are taking more precautions for the protection of their workers, probably for financial reasons, but the percentage of decrease is very marked, though these injuries added to the careless personal injuries, accidents, etc., still take their increasing toll of injured eyes with the sympathetic ophthalmia and primary injuries producing blindness.

I have deviated somewhat from the subject assigned me, but merely to show the efforts put forth to combat such disabling diseases—the background, time and training which this branch of the medical profession has put forth to combat this dread disease, Chronic Glaucoma, which like a thief in the night creeps upon one to snatch away the most valuable asset, the eyesight.

By Glaucoma we understand a hardening of the eye ball. It is generally conceded that this interocular pressure is brought about in some way by a normal or increased lymph production with an outflow insufficient to take care of the amount of aqueous produced. The study of Glaucoma has brought about many divers opinions and many theories of etiology; however, one of the most generally accepted theories is that of Priestly Smith who advances the idea that the lense continues to grow throughout life and that the space known as the circumferential space between the lense and the ciliary processes will be affected by this lense growing and expanding in every direction. The iris is pushed into the anterior chamber, producing a very shallow chamber. This pressure on the root of the iris causes more or less occlusion of the drainage canal. If this pressure persists and causes a complete closure, we may have an acute exacerbation more or less painful, but in contrast to this we have Chronic Glaucoma undergoing all these changes, yet with no pain or acute symptoms to direct our attention to the eye conditions and changes taking place within; the pressure is gradual, the eye looks normal and there is so very little elevation of tension—in fact, a slight elevation may exist at one examination and yet at others, even many examinations,

may show no increase—that it is necessary sometimes to make repeated examinations under different circumstances, different times of the day, with and without food, and when so slight that only with a tonometer are these such slight variations detected. If there is a small cornea, a sluggish pupil slightly dilated and even no tension, we have ground for suspicion of beginning glaucoma simplex, though there is so little excavation of the disk. Unfortunately, the subjective symptoms in the earlier stages are those of vision disturbances and as the fields of vision affected usually are the nasal side of each eye which overlap, this is passed over unobserved.

Naturally, the public, uneducated, thinks only of glasses to remedy this defect in vision and goes to the drug store or ten cent store or to some other glass fitting establishment, and procures the lenses with which they see best, trusting that they are now fixed and thus weeks and months of precious time is lost, and in many instances eyes have been lost. At least seventy-five per cent of all glass wearing public are wearing such fitted glasses. I do not mean to say or condemn the more conscientious and painstaking optometrists, of whom there are many, who are capable of accurately fitting lenses, and, there is no use kidding ourselves, with their show of equipment, advertising stunts and salesmanship, are doing the major part of the glass fitting business. So a part of our educating campaign not to be overlooked should be to either give better service than they, or to acknowledge their ability and cooperate to a measure with them for the good of our patients.

Many errors have been made in the manner just mentioned and frequently these individuals have been told that the poor vision was due to cataracts and that they must wait for operation before glasses could be fitted. Again delay causes loss of precious time, when in all probability the eye or eyes might have been saved by a more careful ophthalmoscopic examination together with careful charts of the fields of vision.

The young are frequently victims of the disease, too. The myopic individual is not

free from it and the male sex is equally likely to be affected as the female, as this disease seems to play no favorites. After the diagnosis has been definitely made by eliminating cataracts, which sometime show an increased tension, and from other atrophies of the optic nerve which would cause a gradual diminution of vision, we find we have an increase in interocular tension, a cupping of the disc, a narrowing of the field of vision particularly to the nasal side, a shallow anterior chamber and corneal changes.

The treatment of Chronic Glaucoma which promises any degree of success is surgical. Miotics have to be resorted to sometimes because of the mental attitude of the patient and family refusing an operation. These (Pilocarpine and Eserine) may be used to contract the pupil and relieve the tension, but they do not bring about a cure and only give temporary relief, with a definite certainty of blindness after a time. There has been no operation yet devised which is universally used and accepted. Iridectomy, which has proven so successful in acute Glaucoma, does not offer the same relief in the chronic variety because the iris has been pushed back against and has become closely adherent to the sclera corneal juncture so that it became apparent that an operation for a permanent filtering scar would be ideal and with this idea in view many operators have attempted to do this, and we now have some few which are being used with varying results. Probably the

trephining of Elliott or some modification which removes a corneal scleral button and together with the root of iris, is proving most satisfactory. Other operators claiming success in many cases, yet too recent for accurate tabulation, incarcerate portions of the iris, silk, thread, etc., in the scleral wound which act as a drain beneath the conjunctiva. All of the operations, including the trephining, have met with a great deal of criticism regarding the after effects. The dense scar formed and closure, together with dangers of infection and loss of eye, with even sympathetic ophthalmia, are offset by complications being rare, and the amount of good to be gained. This operation or some other recognized one with this object in view of relieving the tension permanently should be performed early. Very little can be promised even by operation in the more advanced cases, which sometimes bring about a rapid loss of vision.

Almost invariably both eyes are affected sooner or later in Chronic Glaucoma. It is necessary that if only one eye be affected and under treatment either by medicine or operation that the well eye be watched very closely and be examined at short intervals. There arises the question advocated by some of a prophylactic operation upon the well eye, and the question of kind of an operation, but at any rate the individual should be warned of the dangers and care of self and eye, looking to general health, focal infections and care of the eyes with frequent visits to the oculist.

Report of Licenses to Practice Medicine Granted by Reciprocity or by Endorsement of Credentials

Examination held at Biltmore Hotel, Oklahoma City, December 11, 1935.

The following applicants passed:

NAME	Year of Birth	Place of Birth	School of Graduation	Year of Graduation	Permanent or Present Address
Edwards, Edward Clay	1896	Corsicana, Texas	Vanderbilt University	1924	Clinton, Oklahoma
Curry, Jas. Franklin	1908	Spring Hill, Tenn.	University of Tenn.	1934	Sapulpa, Oklahoma
Greenberger, Edward David	1907	Passaic, N. J.	Univ. and Bellevue Medical College	1928	McAlester, Oklahoma
Roberts, Charles James	1909	Maywood, Ill.	Northwestern Univ.	1930	Enid, Oklahoma
Harms, Edwin Martin	1906	Cordell, Okla.	University of Okla.	1934	San Diego Co. Hosp. San Diego, Calif.
Stephens, Frank Gordon E.	1910	Sapulpa, Oklahoma	University of Okla.	1934	University Hospital Oklahoma City, Okla.
Ungerman, Arnold H.	1909	Leavenworth, Kans.	University of Okla.	1934	St. Elizabeth Hospital Washington, D. C.
Masters, Herbert Alfred	1909	Watonga, Okla.	University of Okla.	1934	St. Anthony Hospital Oklahoma City, Okla.

THE JOURNAL

OF THE

Oklahoma State Medical Association

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DR. L. S. WILLOUR.....Editor-in-Chief
McAlester, Oklahoma

DR. T. H. McCARLEY.....Associate Editor
McAlester, Oklahoma

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Reprints of original articles will be supplied at actual cost provided requests for them is attached to manuscripts or made in sufficient time before publication.

Articles sent this Journal for publication and all those read at the annual meetings of the State Association are the sole property of this Journal. The Journal relies on each individual contributor's strict adherence to this well-known rule of medical journalism. In the event an article sent this Journal for publication is published before appearance in the Journal the manuscript will be returned to the writer.

Failure to receive The Journal should call for immediate notification of the editor, 203 Ainsworth Building, McAlester, Oklahoma.

Local news of possible interest to the medical profession, notes on removals, changes of addresses, births, deaths and weddings will be gratefully received.

Advertising of articles, drugs or compounds unapproved by the Council on Pharmacy of the A. M. A., will not be accepted.

Advertising rates will be supplied on application.

It is suggested that wherever possible members of the State Association should patronize our advertisers in preference to others as a matter of fair reciprocity.

Printed by News-Capital Company, McAlester

EDITORIAL

SEASON GREETINGS

The Officers of the Oklahoma State Medical Association extend to the membership their most sincere wish for a Happy and Prosperous New Year.

May our associations with our patients become more sincere and sacred from day to day, that the patient-physician relation, so often referred to, become an ever more sincere and beautiful concept.

May the professional and social relation among Oklahoma Physicians continue to develop throughout the year of 1936, that we may present to the people of this State a unified body of medical men prepared to meet any problems that the day may present.

NEW YEAR'S RESOLUTIONS

I will recognize the sacredness of human life:

This at first glance seems a very foolish resolution for a physician to make when we devote most of our time to the saving of life and the relief of suffering. However, are we all as careful as we should be in driving our cars on the city streets and open highways? Observe traffic regulations, normal rate of speed; treat the other driver as though he were your friendly neighbor. Not only practice, but preach safety on the roads.

I will settle the liquor question in my own mind on the highest possible plane:

Physicians will be quoted in the coming campaign as to the effects of alcohol on the body; be sure to confine our opinions to its true physiological actions. We must make our decision as to its use as a beverage on a high plane for our opinions do much to mold public opinion.

I will be true to my religion:

Whether our religion be simply a code of morals, Judaism, Catholicism, Protestantism or what not, we must in order to reflect honor and credit upon our profession live true to our ideals and support in every possible way the religion we espouse. Religion is for strong men, for men of learning and influence. Theodore Roosevelt once said that if we continue to educate the mind and neglect to educate the heart we will develop a race that will destroy our civilization.

COUNCIL MEETING

Oklahoma City, January 5, 1936

Called meeting of the Council of the Oklahoma State Medical Association was convened at the Oklahoma City Club with the president, Dr. Louis H. Ritzhaupt, presiding. The following councilors were present: Doctors L. H. Ritzhaupt, W. A. Howard, J. S. Fulton, H. K. Speed, F. M. Adams, S. A. McKeel, A. B. Chase, A. S. Risser, W. H. Livermore, O. E. Templin and L. S. Willour.

By motion of Dr. Templin, seconded by Dr. McKeel, and carried, the reading of

the minutes of the last meeting were not read as they were published in the Journal.

Motion by Dr. Chase, seconded by Dr. Speed and carried unanimously, it was decided to hold the Annual Meeting at Enid, the dates to be April 6th, 7th and 8th.

On motion by Dr. Willour, seconded by Dr. McKeel and carried, it was decided to adopt the request of the section on Urology, Syphilology and Dermatology and create two sections—one to be the section on Genito-Urinary Diseases and Syphilology with the following officers: Doctors A. R. Sugg, Ada, Chairman; Frank J. Baum, McAlester, Vice Chairman; Onis G. Hazel, Oklahoma City, Secretary; another section on Dermatology and Radiology with the following officers: Doctors W. E. Eastland, Oklahoma City, Chairman; J. F. Campbell, Muskogee, Vice Chairman; C. M. Ming, Okmulgee, Secretary.

A letter from Dr. Earl McBride, relative to the establishment of further crippled children's facilities, was read to the Council and on motion was passed until a later meeting.

The question of cooperative hospitals in which medical and surgical facilities are furnished was freely discussed and some of the advertising material of the Elk City institution presented. The ethical character of the methods used seemed to be evident to the Council. Dr. W. G. Husband of Hollis, was introduced and discussed the development of this phase of practice in his section of the state. The following motion was made by Dr. Willour, seconded by Dr. Fulton and carried: That the Council stand squarely behind the County Medical Societies where such misconduct is being carried on and furnish necessary funds to prosecute such cases before the State Board of Medical Examiners in an attempt to have the license of the offenders revoked.

Mr. George Brown, State Compensation Officer, W. P. A., was introduced by the President, and made some very interesting observations. He stated that there is a security officer on each project with authority to order service for any injured employee; they are instructed to divide the work among the regular practitioners;

there are no appointments made to do this work, and the injured man may select his own physician, however, the cults are not recognized and hospitals under their direction cannot be used. Prompt payment of bills is assured and if there is a delay of more than thirty days the compensation officer should be notified.

The fee schedule as adopted by the Council and published in the Journal under date of November, 1933, is very close to the amounts that will be allowed.

Mr. Brown requested the physicians of the state to help the government protect itself against the maligner as in some cases of back strain, hernia and other comparable conditions. He also asked that all deaths of W. P. A. employees be reported whether or not the death be the result of injury.

A motion by Dr. Risser, seconded by Dr. Adams, that the Trustees of the A. M. A., be requested to call an immediate meeting of the House of Delegates to consider nothing but Medical Economic problems, as suggested by the New Jersey State Association, was discussed and then withdrawn by the maker with consent of the second.

Meeting adjourned.

L. S. WILLOUR, Secretary.

Post Graduate Courses Are Resumed

Physicians of Oklahoma will be gratified to learn that Post Graduate Courses have been resumed. The State Medical Association, through the Committee on Post Graduate Medical Study, will open with the first course February 3, in the west half of the State. The course will include five cities: Oklahoma City, El Reno, Enid, Alva, and Woodward.

Dr. Henry Turner of Oklahoma City is Chairman of the Post Graduate Medical Committee for the State Medical Association. Dr. H. C. Weber, Bartlesville, is a member of the Committee, and Dr. Walter Hardy of Ardmore is also a member.

The following program will be offered by this faculty, all of whom are from the Cleveland Clinic:

1. Dr. Carlton Ernstene—
 - (1) Use of Drugs in the Treatment of Heart Disease
 - (2) The Differential Diagnosis of Coronary Artery Disease.
2. Dr. Charles L. Hartsock—
 - (1) The Treatment of Peptic Ulcer.
 - (2) Diagnosis and Treatment of Functional Digestive Disturbances.
3. Dr. Robert S. Dinsmore—
 - (1) General Review of Thyroid Problems.

- (2) Handling of the Patient with Gall Bladder Disease.

Note: All three instructors have slides.

More detailed information about the faculty members is listed as follows:

A. CARLTON ERNSTENE, A.B., M.D. Graduated from State University of Iowa, 1925. Interne, Henry Ford Hospital, Detroit, 1925-26. Assistant in Medicine and Instructor in Medicine, Harvard Medical School, 1926-1932. Associate physician in charge of Cardiovascular Division, Cleveland Clinic, since 1932.

CHARLES L. HARTSOCK, B.S., St. John's College, Annapolis, 1916. M.D., Johns Hopkins University School of Medicine, 1920. Interne, Lakeside Hospital, Cleveland, 1920-21. Fellowship in the Cleveland Clinic Foundation, July, 1921-July, 1923. Became a member of the permanent staff of the Cleveland Clinic Foundation, Department of Internal Medicine, July 1, 1923.

ROBERT S. DINSMORE, A.B., University of Kansas, 1914. M.D. Washington University, 1917. Interne, Lakeside Hospital, 1917-18. Lakeside Hospital, 1919-23. Traveling Fellowship, 1923. Became a member of the permanent staff of the Cleveland Clinic Foundation, Surgical Division, July, 1924.

Dallas Southern Clinical Society Conference

The Dallas Southern Clinical Society will hold its eighth annual Spring Conference March 16th, 17th, 18th and 19th, 1936. An imposing list of specialists will participate in the program and this will be published on page iii of the advertising section of this Journal.

In previous years this Conference has been the outstanding feature of medical education in the Southwest and should attract many physicians from Oklahoma. Not only will you be greatly benefited from a professional standpoint but arrangements have been made for many social features which certainly will be enjoyed by all who participate.

Editorial Notes—Personal and General

DR. J. SAMUEL BINKLEY, Oklahoma City, who has been engaged in the practice of general surgery at 805 Medical Arts Building, has accepted the appointment on the House Staff of Memorial Hospital, New York City, for specialized study in the Diagnosis, Surgical and Radiological management of Cancer and allied diseases.

DR. and MRS. B. W. SLOVER, formerly of Blanchard, have moved to Granite where they will make their future home.

DR. CHAS. M. MING, Okmulgee, attended the annual meeting of the Radiological Society, held in Detroit, in December. He took the examination given by the American Board of Radiology and has just been notified that he has been granted the Board's Certificate in Radiology.

NOTICE of the death of DR. EDWARD STARR JUDD, Rochester, Minn., has been received. Dr. Judd, formerly President of the American Medical Association, died of pneumonia. At the time of his death he was chief of the surgical staff of the Mayo Clinic. He was fifty-seven years of age.

News of the County Medical Societies

OKMULGEE-OKFUSKEE County Medical Society met at the Belmont Hotel, Okmulgee, Monday, December 10th, for their annual meeting. The following officers were elected: Doctors J. C. Mathe-ney, Okmulgee, President; G. Y. McKinney, Henry-etta, Vice-President; M. B. Glismann, Okmulgee, Secretary-Treasurer; A. R. Holmes, Henryetta, Censor; I. W. Bollinger, Henryetta, and L. B. Tor-rence, Okmulgee, Delegates to the State convention.

WAGONER County Medical Society elected the following officers for 1936, at their meeting in December: Doctors S. R. Bates, President; J. H. Plunket, Vice-President; John D. Leonard, Secre-tary (all of Wagoner); H. K. Riddle, Coweta, Delegate; John D. Leonard, Alternate.

STEPHENS County Medical Society met Decem-ber 17th, in Duncan, and elected the following officers: Doctors Berry H. Burnett, President; E. King, Vice-President; D. Long, Secretary (re-elected); A. M. McMahan, Delegate to the State meeting; Wallace S. Ivy, Censor; all of Duncan.

ROGERS County Medical Society elected the following officers for 1936 at their meeting in December: Doctors J. C. Bushyhead, Claremore, President; K. D. Jennings, Chelsea, Vice-President; W. A. Howard, Chelsea, Secretary-Treasurer.

OSAGE County Medical Society elected the fol-lowing officers for 1936: Doctors G. I. Walker, Hominy, President; G. K. Hemphill, Pawhuska, Vice-President; J. F. Daly, Pawhuska, Secretary-Treasurer; C. K. Logan, Hominy, and Roscoe Walker, Pawhuska, Censors; T. A. Ragan, Fairfax, Delegate to the State meeting; R. O. Smith, Hom-iny, Alternate.

MUSKOGEE County Medical Society elected the following officers at their annual meeting in De-cember, held at the Arrow Cafeteria, Muskogee: Doctors C. M. Fullenwider, Muskogee, President; W. R. Joblin, Porter, Vice-President; S. D. Neely, Muskogee, Secretary-Treasurer; W. D. Berry, Mus-kogee, Censor.

JEFFERSON County Medical Society elected the following officers for 1936: Doctors J. I. Derr, Wau-rika, President; F. M. Edwards, Ringling, Vice-President; J. I. Hollingsworth, Waurika, Secretary-Treasurer.

CHOCTAW County Medical Society elected the following officers at the December meeting: Doc-tors W. N. John, Hugo, President; R. L. Gee, Hugo, Vice-President; E. A. Johnson, Hugo, Secre-tary-Treasurer.

DR. J. L. DAY and the Staff of the Western Oklahoma Hospital at Supply, entertained the WOODWARD County Medical Society in Decem-ber. The Society voted to have a post graduate course in February, to be presented by the doctors of the Cleveland, Ohio, Clinic. The following offi-cers were elected for 1936: Doctors J. L. Day, Supply, President; O. C. Newman, Shattuck, Vice-President; C. W. Tedrowe, Woodward, Secretary-Treasurer; T. C. Leachman, Woodward, Censor.

GARVIN COUNTY Medical Society elected the following officers for 1936: Doctors Chas. M. Pratt,

Lindsay, President; C. L. Sullivan, Elmore City, Vice-President; John R. Callaway, Pauls Valley, Secretary-Treasurer; W. P. Greening, Pauls Valley, Censor and Alternate to the State meeting; A. H. Shi, Stratford, Delegate.

WOODS County Medical Society re-elected the officers of 1935, at their meeting in November, to hold over for 1936. A motion picture "Modern Methods of Anesthesia" was shown. Dr. Henry Tihe, Wichita, read a paper on "Relation of Gastric Ulcer to Malignancy." Dr. John H. Kleinheksel, Wichita, read a paper on "Diabetes in Pregnancy."

PITTSBURG County Medical Society elected the following officers for 1936 at their annual meeting held in December at the Aldridge Hotel, McAlester: Doctors B. B. Kies, President; Claude E. Lively, Vice-President; L. C. Kuyrkendall, Secretary-Treasurer; Edward D. Greenberger, Censor; R. K. Pemberton, Delegate; all of the above from McAlester. Dr. W. P. Lewallen, Canadian, Alternate.

The School Child's Breakfast

Many a child is scolded for dullness when he should be treated for undernourishment. In hundreds of homes a "continental" breakfast of a roll and coffee is the rule. If, day after day, a child breaks the night's fast of twelve hours on this scant fare, small wonder that he is listless, nervous, or stupid at school. A happy solution to the problem is Pabulum, Mead's Cereal cooked and dried. Six times richer than fluid milk in calcium, ten times higher than spinach in iron, and abundant in vitamins B and G, Pabulum furnishes protective factors especially needed by the school child. The ease with which Pabulum can be prepared enlists the mother's cooperation in serving a nutritious breakfast. This palatable cereal requires no further cooking and can be prepared simply by adding milk or water of any desired temperature. Its nutritional value is attested in studies by Crimm et al who found that tuberculous children receiving supplements of Pabulum showed greater weight-gain, greater increase in hemoglobin, and higher serum-calcium values than a control group fed farina.

Mead Johnson & Company, Evansville, Indiana, will supply reprints on request of physicians.

Bladder Abnormalities Due to Injury of Motor Pathways in Nervous System

By means of an air-water manometer and recording tambour Lloyd G. Lewis, Orthello R. Langworthy and John E. Dees, Baltimore (Journal A. M. A., December 28, 1935), have made graphic records of the behavior of the detrusor muscle during bladder filling. The bladder muscle characteristically responds to stretch stimuli, and important information can be obtained by observing and recording waves of bladder contraction. Patients were studied who suffered either bilateral or unilateral pyramidal tract injuries or had lesions of motor tracts in the spinal cord. With release from cortical control, the stretch reflex is hyperactive. The bladder empties precipitously with a small volume of fluid. When the motor pathways from the midbrain are injured bilaterally along with the corticospinal tracts, the waves of bladder contraction are frequent but of small amplitude. They are ineffective in emptying the bladder. A study of contraction waves of the muscle during filling is of aid in forming an opinion of the efficiency of a bladder with damaged innervation.

Bulletin in Regard to Sales Tax

To All Optometrists, Opticians and Oculists in Oklahoma:

Our Association attorneys have just advised us that the 1935 Legislature amended the sales tax law making it compulsory to collect sales tax from our patients and it is now a violation of the law, and one is subject to prosecution, to absorb the tax and remit the same to the Tax Commission in lieu of collecting it from the patient. So, for this reason it will be necessary for you to revise your method of handling the sales tax and we suggest the following method:

The law and regulations provide that: Professional services are exempt if a standard fee is charged for your examination, irrespective of whether or not the patient needs or obtains from you, glasses. This is dependent, however, upon your records clearly showing the separate item for professional services and upon the retail price of the glasses you must collect and remit the sales tax.

ILLUSTRATION: John Smith comes to you as a patient complaining of eye difficulty. You inform him that you will examine his eyes and advise him whether or not he needs glasses and the charge for your examination will be \$5.00 irrespective of whether he needs glasses or not. You then make your examination and if he does not need glasses your \$5.00 examination fee is not subject to sales tax. If, however, he does need glasses and the total charge for your examination and the glasses is \$20.00, you must collect fifteen cents tax on the retail price of the glasses to remit to the Tax commission. Your book entry should be approximately as follows:

JOHN SMITH

Examination	\$ 5.00
Glasses	15.00
Tax15
TOTAL	\$20.15

Program for Tuberculosis Control in Puerto Rico

In view of the importance of tuberculosis as a health problem in Puerto Rico, the present administration of the health department formulated a program to intensify its efforts to control the disease which Eduardo Garrido Morales, San Juan, P. R. (Journal A. M. A., December 7, 1935), presents. The program includes the following: (1) Intensification of the tuberculosis work in the dispensaries of the public health units, which are the case finding agencies under the health department. (2) Isolation of the largest possible number of cases of open pulmonary tuberculosis in four district hospitals with a total capacity of one thousand five hundred beds, adequately equipped for giving proper treatment. (3) Organization of ten anti-tuberculosis centers, each in charge of a tuberculosis specialist, to whom cases are referred for diagnosis and selection before admission to the hospitals. These centers also serve as collapse clinics for the application of pneumothorax treatment to patients after they leave the hospitals. (4) Two traveling clinics to provide x-ray facilities and pneumothorax treatment for rural municipalities. (5) An educational campaign, especially through the public health units and the public schools of the island. (6) Intensification of preventive measures by increasing the number of rest rooms in the public schools and increasing the number of preventorium beds, activities under the management of the Commission for the Prevention of Tuberculosis in Children of School age. (7) Eradication of tuberculosis in cattle.

DOCTOR MARION M. ROLAND

Dr. Marion M. Roland was born near Bowie, Texas, in 1882, and died on a Santa Fe train December 1, 1935, of coronary thrombosis while on his way to Detroit to attend a meeting of the Radiological Society of North America. He leaves his wife, Hazel I. Roland; one child, Marion M. Roland, Jr., D.D.S.; a brother, George Roland, D.D.S., and his aged mother, all living in Oklahoma City.

Dr. Roland came to Oklahoma with his parents in 1889 and settled on a farm near Weatherford, where he grew to manhood and married Hazel Nichols, daughter of a prominent druggist of Weatherford.

He attended Vanderbilt University three years, then transferred to Jefferson Medical College where he was graduated in 1908. After graduation he did a general practice at Eakley, Oklahoma, then joined in partnership with Dr. Everett S. Lain of Oklahoma City, January 1, 1910. This congenial, happy partnership continued until his death.

Dr. Roland was a volunteer during the early months of the World War, and served as a radiologist for twenty-two months—eleven months overseas.

He was a member of his County Society, the State association, a Fellow of the American Medical Association, member of the Southern Medical Association, the Radiological Society of North America, and had recently been honored with a fellowship in the American College of Radiology. He was an associate professor in the University of Oklahoma School of Medicine. His knowledge and skill in therapeutic radiology was unexcelled anywhere in the Southwest.

He was a member of the Baptist Church, Oklahoma City Rotary Club, Chamber of Commerce, the Shrine, Knights Templar and Scottish Rites Masonry.

Dr. Roland was widely known for his congenial, cheerful, optimistic personality which deeply endeared him not only to all his office associates but to the multitudes with whom he came in contact during his professional life. His heart was as tender as a child's. He was generous almost to a fault with financial and other assistance to friends, medical students and even to the trudging peddler on the street.

Our medical profession has lost an outstanding radiologist and valued member, his family a devoted, loving husband, father and brother, and the Lain-Roland-Eastland Clinic a kindly and beloved fellow associate.

DOCTOR JAMES EDWARD DAVIS

Grim tragedy visited the Davis home in McAlester when as a result of an automobile collision near Shawnee, December 20th, both Dr. Davis and Mrs. Davis met their death, Mrs. Davis being instantly killed and Dr. Davis dying in A. C. H. Hospital an hour after the accident.

Dr. Davis was born in Greenback, Tenn., May 17, 1879. He graduated in medicine from the Hospital College of Medicine, Louisville, Ky., in 1904. He practiced general medicine in Sweetwater, Tenn., until 1912 when he took post graduate work in Eye, Ear, Nose

and Throat and located in McAlester, where he practiced his specialty until the time of his death. Dr. Davis was a past President of the Pittsburg County Medical Society, member of the Oklahoma State Medical Association, where he was active and had filled many important committee assignments; he also held membership in the Southern Medical Association and the American Medical Association.

October 13, 1910, he was united in marriage to Birdie Bailey and of this union there survive four children, Addie Lee, Mary, Mildred and Edward, Jr.

Dr. Davis was a member of the McAlester Country Club, Rotarian, Reserve Officers' Association, McAlester Lodge No. 96, A. F. and A. M., Indian Consistory and an Elder in the First Presbyterian Church.

His church life was a most beautiful thing to observe and I want to quote from the funeral sermon preached by Dr. Samuel R. Braden, his pastor, when he officiated at the double funeral of Dr. and Mrs. Davis:

"He was a man of dependability. There was little doubt where he stood. He was a man of big-heartedness. He cared for his patients with a solicitousness which in quality approached maternal tenderness. He gave liberally to the things in which he believed. He was a man who enjoyed friendships. He went to see people because there was a yearning in his heart to be with them. For all of these qualities we shall miss him. As a telephone pole with wires attached, in falling, causes confusion because of the attachments, so when Dr. Davis falls many of our hearts feel that the connections which joined him to us have been severed; and we suffer loss. He was a devout man—a man of faith and prayer. In these latter months he read much about his church, and from the scriptures. As an Elder none was more zealous than he to become a good Elder. He had an intense desire to know what a church officer should be and do.

Therefore we are all bereft. He had a very definite place in the community. His love for children, his wide acquaintance, his loyalty to his profession—how proud he was to be a doctor—and of his fellow doctors, his devotion to his church—these things are so combined in the man to make him a man of strength. That is what we can say of him—HE WAS A MAN OF STRENGTH.

Interment was in the Masonic section of Oak Hill Cemetery, McAlester.

DOCTOR WILLIAM ALEXANDER THOMPSON ROBERTSON

Dr. William Alexander Thompson Robertson was born at Howick, Quebec, Canada, on January 9, 1869. He received his preliminary education at Huntingdon Academy, Quebec, and graduated in Medicine from McGill University, Montreal, in 1896. Following his graduation he practiced his profession then came to Ponca City in July, 1898. He practiced his profession here until May, 1929, when he suffered a paralytic stroke. He continued to attend to his business affairs, and died suddenly from a second stroke on October 26, 1935.

RESOLUTIONS

DR. WILLIAM ALEXANDER THOMPSON
ROBERTSON

WHEREAS, our fellow member and friend, Dr. William Alexander Thompson Robertson, of Ponca City, Oklahoma, who was a member of long standing of our Society, has suddenly been called from us; and,

WHEREAS, his loss is deeply felt by each and every member of this Society and by his legion of lay friends, because, in his thirty-seven years of practice in Ponca City in the medical profession, he has always exemplified the noblest of virtues in all his relationships; and

WHEREAS, we join together to mourn the passing to his great reward of this public benefactor,

THEREFORE, be it resolved by the Kay County Medical Society, at its regular meeting of November, 1935, that our sincere sympathy be extended to his wife and family.

KAY COUNTY MEDICAL SOCIETY,
By Dr. M. S. White, President.

DOCTOR JAMES EDWARD DAVIS

The members of the Pittsburg County Medical Society, feeling deeply the loss of their highly esteemed confrere, Dr. James E. Davis, assure the members of his family of our sincere sympathy in his passing.

We feel that his loss is not only to the members of his family whom he loved so devotedly, the community whom he served so faithfully, but also to his brothers in the practice of his profession.

J. F. PARK,
T. H. McCARLEY,
R. K. PEMBERTON.

Comminuted Colles' Fractures in Elderly Patients: Methods of Treatment and End Results in Thirty Cases

G. E. Haggard, Boston (Journal A. M. A., November 30, 1935), points out that comminuted Colles' fractures are of relatively frequent occurrence in elderly patients. The comminution appears to be due to the presence of brittle avascular bone. Prompt reduction of the fracture is imperative. Reduction should be carried out under general anesthesia, tribrom-ethanol preferred, and then visualized under the fluoroscope. It is most important that the dorsal tilt of the radial articular surface be corrected and that the normal relationship of the distal radial ulnar joint be re-established. There are pronounced advantages of the so-called sugar tong (Simpson) plaster splint. Because of the tendency to recurrence of the deformity of the distal end of the radius in these elderly patients, owing to delayed bone repair, it is believed that the extremity should be continuously immobilized in the "sugar tong" plaster splint for a minimum of from five to seven weeks. The splint is adjusted as indicated; unless there originally was marked swelling, this adjustment does not require removal of the splint. Flexion contracture of the hand did not occur in the patients treated by this method. Free finger joint motion is necessary, a range of motion allowed by careful application of the splint. Daily complete arm abduction is of advantage in avoiding limitation of shoulder joint motion. Nonunion of the ulnar styloid, following fracture, was not a significant cause of symptoms. With this procedure, followed by intensive massage, heat and active ex-

ercise, a good anatomic and a good functional result was obtained in twelve and in ten patients, respectively, in a group of fifteen as compared with five good anatomic and six good functional results in a similar group of fifteen patients who were splintered an average of three and a half weeks.

Lobar Collapse in Children

Gladys L. Boyd, Toronto (Journal A. M. A., December 7, 1935), states that the actual occurrence of lobar collapse is so restricted to the atelectasis of a lower lobe, characterized radiologically, by a basilar triangular shadow, that its discussion is practically limited to the study of the latter condition. A basilar triangular shadow may be described as a homogeneous opaque shadow in the form of a right angled triangle having for its base the diaphragm, one side of the mediastinum, and a hypotenuse formed by a line extending from the hilus to some point on the diaphragm. The latter may be straight, convex, concave or slightly irregular in its outline. Importance is attached to its character as varying with the underlying cause. These opaque areas until quite recently have been attributed to mediastinal pleurisy, seldom proved, and to fibrosis of the lung. The author has seen basilar triangular shadows in roentgenograms of the lungs of fourteen children. Twelve of these were definitely associated with bronchiectasis. This represents a morbidity of only about seven per cent of the cases of bronchiectasis studied in the period of observation. In all cases, as far as could be determined, such shadows were produced by collapsed lower lobes of the lung. There was no evidence to support Kerley's contention that such collapse usually occurs in an accessory lobe of the lung. Every case was examined bronchoscopically, and pathologic changes of the bronchial mucosa were apparent. The essential lesion is probably in the smaller bronchioles, which become occluded by secretion with resulting collapse. Dilatation is produced readily in the weakened bronchi by increased intrabronchial pressure. Whether such dilatations are compensatory, as Findlay suggests, is not certain. It may be that these cases are more commonly associated with a lobar type of pneumonia than are those without lobar collapse.

Congenital Atrophy of Skin, with Reticular Pigmentation

M. F. Engman, Jr., St. Louis (Journal A. M. A., October 19, 1935), reports the case of reticular pigmentation of the skin with atrophy that M. F. Engman, Sr., presented before the Chicago Dermatological Society in 1926. In his description of the case he remarked that the brother of this patient also suffered, but to a lesser degree, from the same condition. These patients have continued under the author's observation and have submitted to certain studies, which are discussed.

The Mastoid

What is a mastoid? Dr. Louis T. Curry answers this question, so often asked, in an article under that title, appearing in the January Hygeia. The question is usually asked when there is pain or swelling behind the ear or when some one has undergone an operation on the mastoid bone. The inquiry should really be, What is mastoiditis? Mastoiditis is an inflammation of the mastoid bone. Disease of the mastoid rarely takes place unless there is or has been disease of the ear.

The mastoid, a hump of bone behind the ear, is connected with that part of the throat behind the nose called the nose-throat.

ABSTRACTS : REVIEWS : COMMENTS and CORRESPONDENCE

EYE, EAR, NOSE AND THROAT

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Blindness, Eye Diseases and Their Causes in the Land of Canaan. N. I. Shimkin, M.D., Ph. D. The British Journal of Ophthalmology, October, 1935.

A twenty-five or thirty page article is summarized as follows by the author:

1. The author states that the Land of Canaan in the epoch 1400-1000 B. C. had nearly the same area, the same density of population as the inhabited Palestine of today, the same climate and the same eye diseases resulting in blindness as in our days.

2. The proofs for the above are: The ancient Bible laws for the protection of the blind in the time of war and of peace; the wide spread blindness among the privileged town classes such as the Levites; the narratives about mass blinding among the troops and the peaceful inhabitants, especially in the south of Canaan; and the proverbs and sentences of the prophets about the epidemics of eye diseases resulting in shrunken globes. All these historical facts are compared with similar causes of eye diseases of the modern Palestine.

3. The author notes that there were in Canaan two main causes for the spread of eye diseases resulting in blindness: (1) The geographical situation of the land as a "caravan road" of peaceful and military communication between the neighboring countries thoroughly infected with trachoma and acute conjunctivitis as Egypt, Syria (Horan), and Babylon, etc.; (2) the internal causes: the hot and dry climate as in our days (contrary to the accepted opinion that in Canaan, in the epoch described, the climate was milder and more humid than nowadays), the poverty and ignorance of the lower classes of the population suitable for the state with the regime of slavery; the uninterrupted wars as a best source for the traumatic and infectious epidemics of eye diseases, blinding war prisoners, the very bad sanitary condition of the land and—last but not least—the lack of special medical aid—surgical and therapeutic—for the population of old Palestine.

4. There are shortly mentioned the spread of trachoma and acute conjunctivitis in Egypt, in the epoch described, and new proofs are given for the spread of these diseases in Horan (Syria) and Babylon. The author expresses his opinion about eye diseases of our first mother Leah, and suggests that it was trachoma with corneal complications, and discusses the spread of infectious eye diseases in Babylon taking into consideration the Hammurabi code and the Old Testament narratives (story of Balaam's eyes). The author also gives his opinion and proofs that the obscure word in Hammurabi's code—"naqabtu"—means probably operation for trachoma and not for cataract or an

incision of an abscess of the lacrimal sac, as it is admitted in many manuals when interpreting the word "naqabtu."

5. The improvement of the economic and cultural conditions of the Arabic population today influenced by the Jewish colonization, especially in the north of Palestine, the peaceful development of the land under the rule of the British mandatory government, the present high sanitary state of Palestine and the medical special aid which can be obtained by the poorest classes of rural population—taking all this into consideration the author came to the conclusion that the rate of blindness in Canaan was immeasurably greater than that of modern Palestine, and the eye diseases resulting in blindness in contemporary Palestine are a direct continuation of eye diseases which existed already in Canaan 3,500 years ago.

6. At the end of this article the author speaks about the figurativeness of the Bible terminology for expressing the different grades of weakening of vision in connection with old age. For absolute blindness the term is: Immobile eye (Ain Kama); for sight weakening (as in the case of cataracta nondum matura) the term is: Heavy eye (Ain Kaved); and for cataracta matura: Dim eye (Ain Keha).

Surgical Approaches to Deep Suppuration in the Neck and Posterior Mediastinum. Sam Iglauer, M.D., Cincinnati. Archives of Otolaryngology, June, 1935.

Tillaux in 1887 said that the confusion or difference of opinion on this subject was due to the fact that the cervical fascia was an exceedingly variable structure. Tandler, forty years later, had not made the description much clearer. Today successive publications have not as yet left a clear cut picture for the student to envisage.

Dr. Iglauer describes the cervical fascia in three layers. These are described in addition to certain other spaces. The recent studies of Weintraub and Batson are mentioned. Under the subtitle of Deep Infections he speaks of the demonstrations he has made on the fresh cadaver with lead gauze packings and roentgenograms. He says that swelling in the neck or mediastinum can be shown with a roentgenogram taken in the lateral and antero-posterior positions. Interstitial emphysema resulting from a perforated esophagus is also demonstrated with an x-ray film. The esophagoscope is also a valuable adjunct here.

Under Retropharyngeal infection the technic of draining a retropharyngeal abscess resulting from a broken down lymph gland is discussed. Tucker likes to open these through a pharyngoscope. If there is dyspnea he inserts a bronchoscope first. If the abscess is the result of spinal caries, then an external opening is preferable. The Posterior and Anterior Approaches for drainage are given. Under the Anterior Approach is described the "superior cervical mediastinotomy" or "collar mediastinotomy." This is to drain infections low

in the pharynx and high in the esophagus to prevent an extension into the mediastinum.

Under Approach to the Pharyngomaxillary Fossa a method is given for opening an abscess following a tonsillectomy. Batson's preference is also given. Thrombophlebitis is discussed with its treatment. Mosher's landmark here is given importance. Kramm's recent article on this subject is mentioned with its points of most importance. Iglauder differentiates between the terms "peripharyngeal" and "parapharyngeal."

The Approach to the Neurovascular Bundle is made in the classic manner under the anterior border of the sternocleidomastoid muscle. The diseased veins are exposed until the normal tissue is found. Ligation is followed by resection of the diseased portions. Ludwig's Angina was described in 1836. It is treated as most other cervical infections—by free incisions and drainage. A bibliography accompanies the article.

Persistent Epistaxis: Thrombocytopenia. Royal Society of Medicine, May 3, 1935. Maurice Sorsby. Published in *The Journal of Laryngology and Otology*, November, 1935. Abstract.

Female, age thirty-one, complains of persistent epistaxis. She has had bleeding from the nose since childhood. The attacks at first were of short duration and at long intervals, but eleven years ago she had severe attacks of epistaxis intermittently for several months. Cauterization led to marked improvement for a time. The attacks recurred, and the bleeding was particularly acute during pregnancy four years ago. The patient is still bleeding at frequent intervals, and sometimes loses large quantities of blood. She had to give up her housework because stooping, quick movements and fatigue bring on an attack. The bleeding points in the septum have been touched with caustics, galvanocautery, and diathermy, giving immediate but transient improvement. She is now being treated with calcium (Sandoz) ten c.c. intravenously twice daily followed immediately by the application of ultra-violet rays (Dr. F. Nagelschmidt). Since the present treatment was begun the pathologist (Dr. Himmelweit) reports that the blood-platelets have increased from 39,000 to 230,000 and the red cells from 2,880,000 to 3,760,000. The coagulation time has been reduced from five minutes, fifteen seconds to four minutes; and the bleeding time from six minutes, forty seconds to four minutes, ten seconds. The spleen is not enlarged, and radiologically all bones are normal. There was no undue bleeding on a tooth extraction, and the menses are normal.

Discussion: Alexis Tumarkin said that two years ago he had had a patient, aged forty-eight, who had been bleeding from the nose since she was fourteen, and had had cautery and septal treatment on innumerable occasions. Her nose was full of black crusts; these she took out all at once and then the nose bled. She had a serious bleeding once a fortnight, and dripping of blood every day. In despair, he (the speaker) had tried radium, putting a two mg. needle into one side of the nose and leaving it in two days. The effect in checking the bleeding was dramatic. The nose continued to bleed from the other side, and the patient had asked him to treat that side also in the same way. After waiting five months he had put in two needles for thirty-six hours; that was two years ago. She attended several times to report, and she never again had any troublesome hemorrhage, though she was still troubled with crusts. He felt that if the crusts could be prevented the case

would be completely cured. He had tried a solution of bile in glycerine and alkali and that had helped for some time, but afterwards the crusts had formed again.

The Response to Allergic Phenomena to Ionization. Dr. Arthur M. Alden, St. Louis. *The Laryngoscope*, August, 1935.

Dr. Alden gives a short historical account of this form of nasal therapy. Baber in 1898 is the first recorded as having used this form of treatment. The principles of ionization are brought out in the discussion showing that neither the electrolyte nor the galvanic current alone produce the reaction but that the two under the proper conditions and correctly administered make a successful method for treating certain conditions which almost daily confront the rhinologist.

Warwick is the one who has used this form of treatment most extensively and who claims the highest percentage of good results. Perennial and seasonal nasal allergy was treated by the author with complete relief, at the time of treatment, to sixty or seventy per cent. Failures have been less than twenty per cent.

In 1934 Dr. Alden took ten ragweed hay fever patients and did intradermal skin tests. The nasal mucosa was tested for sensitivity by the application of one drop of extract of whole ragweed pollen to the anterior tip of the right inferior turbinate. Increasing concentrations were used until a definite reaction occurred. After the degree of mucosal sensitivity had been determined, the patient was ionized and as soon as the nose appeared to be normal again, the skin and mucosal tests were repeated. An analysis of this group showed: (1) There was little or no change in the skin tests after ionization. (2) Tests of the sensitivity of the nasal mucosa to dilutions of pollen extract exhibited a marked change after ionization. Although the nose appeared to be normal in each case after the treatment, it was apparent that some change had taken place in eight of the ten cases whereby the shock cells of the nasal mucous membrane were no longer reactive to the atopen and in the two others a much greater concentration was required to produce a reaction. (3) These tests offered no criterion by which the symptomatic result from ionization might be predicted. The one case, which after treatment, still reacted to a dilution of 1/1000, exhibited typical symptoms in the second week of the hay fever season and thirty-three days after ionization. A repetition of the treatment still failed to give adequate relief. Five cases had complete freedom from the disease and the other four were quite comfortable.

The author's conclusions are: (1) Nasal ionization following the technique elaborated by Warwick, when given after the hay fever symptoms have started, apparently stops the disease in the majority of patients for the remainder of the season. (2) About seventy-five per cent of cases of perennial allergic rhinitis are relieved of their symptoms following ionization. (3) The relief in cases of allergic asthma has been much less frequent, but there are still enough good results to warrant further investigation as to the cause of the failures. (4) Clinical observation and microscopic examination of nasal tissues removed from both animals and humans who have been ionized has thus far shown no evidence of permanent nasal damage which could logically be attributed to the treatment.

DERMATOLOGY, RADIUM AND X-RAY THERAPY

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Radiation Therapy of Cancer of the Skin. G. W. Grier, M.D. American Journal of Roentgenology and Radium Therapy, Volume XXXII, Number 2, August, 1934. Page 207-210.

It is evidence from the contents of this essay that the author has pioneered the way in the x-ray treatment of skin cancers in which a very massive technic without filtration is employed. In 1921 he first reported three hundred fifteen cases of epithelioma treated by this method; in 1927, three hundred sixteen more cases were reported, and in the present article two hundred more were reported, making a total of eight hundred thirty-one cases, which certainly is deserving of considerable attention. The technic employed with the x-ray radiation is as follows: 100 kv., 5 ma., 10-inch skin target distance, no filter; exposure time ten minutes. A minimum of three such doses and more frequently four or more are used, giving a total varying from 4500 to 8000 r. This dosage is given within a week's time, a part of it being given each day in succession. The theory of such treatment is that the x-ray dosage is delivered to the affected tissue principally, and the more penetrating rays are present to a much lesser degree, and therefore go into the tissue beneath the malignancy in such a small amount that the normal tissues are much less affected than when filtered radiation is used. The chief disadvantage to this method is that a radiodermatitis ulcer is produced and requires considerable time to heal. (Editor's note—I am able to get equally as good results by thick filtration and the permanency of the cure is as satisfactory without subjecting the patient to a prolonged ulcer.)

Roentgen Treatment of Cervical Adenitis. George E. Pfahler, M.D., Sc.D., and Peter J. Kapo, B.S., M.D. American Journal Roentgenology and Radium Therapy, Volume XXXII, Number 3, September, 1934. Pages 293-300.

This essay is written by two physicians, the former of which is recognized as one of the ranking radiologists in this country and has had a long experience. The reports given cover three hundred thirty-three cases starting in 1903. After briefly discussing the anatomy of the lymphatic structures in the cervical region the authors then go into the etiology, bringing out that cervical adenitis may be caused by tonsillo-pharyngitis, dental disease, otitis media, scalp eczema and pediculosis, scarlet fever, mumps, measles, diphtheria and influenza. Also, etiologically in addition to tuberculous adenitis, there is the group of lymphoblastomas to be reckoned with. Of the entire group there were one hundred thirty-three cases diagnosed as tuberculosis of the lymph node, and the technic of roentgen ray treatment to these structures is the phase of the subject to which attention is especially given. The technic employed is as follows: a nine-inch spark gap (130 kv. p.), 5 ma., 40 cm. skin target distance, 6 mm. al. filter and fifty per cent skin erythema dose (300 r). This dose is given at intervals of one to two weeks until the desired results are obtained, requiring sometimes as little as two treatments, more frequently three or four, but it may be necessary to give as high as ten. It is further stated that during recent years the

authors have been giving larger doses, thereby reducing the number of applications as a matter of economy but they are under the impression that better results are had. In certain recalcitrant cases roentgen therapy is alternated by local incision and drainage of the retained purulent material. Curettment has been necessary in some cases and occasionally excision of the node in cases that have failed to respond to x-ray treatment. Electrothermic destruction was used in one or two cases following x-ray therapy. The essayists believe that x-ray therapy is considerably superior to surgical procedure in such cases and advise it as a means to obtain a quicker and better cure without the necessity of hospitalization.

Fatalities in Exfoliative Dermatitis. Allan K. Poole, M.D., and Roland Wehger, M.D., New Haven, Conn. Journal American Medical Association, Volume 102, Number 10, March 10, 1934.

This paper is particularly valuable from the standpoint of postmortem pathology. It first deals with autopsies of collected reports in the literature on exfoliative dermatitis. In addition, the authors contribute four additional cases of their own upon which autopsies were done. The etiological factor of the exfoliative dermatitis is not confined to arsenic; however, the majority of cases are due to this drug. In one of their own cases, phenobarbital was the cause of the eruption, and in another case no etiological factor was determined.

The original article cites in table form the pathology as found in the lungs, kidney, liver and gastro-intestinal tract, these being the chief sites of attack. The idea is brought out that heretofore the literature has stated that death in most cases of this type is due to bronchial pneumonia. Basing their experience on their own cases and that of those in the literature, it was noticed that instead of a true pneumonic process—except in a few instances—the real pathology was that of a desquamation of the epithelium in the respiratory tract. In some instances the pelvis of the kidney and the ureter had a similar desquamation.

The authors believe that the desquamation of the respiratory tract results in obstruction of the air passages and thereby is the chief cause of death, rather than being due to pneumonia.

X-Ray Therapy of Carcinoma of the Lip and Skin. W. E. Howes, M.D. Radiology, Volume XXIII, Number 1, July, 1934. Pages 71-74.

Howes states that the Brooklyn Cancer Institute is a hospital in New York City in which the beds designated for cancer cases are required to be taken care of immediately; that is, no chronic cases can be cared for. For that reason it became necessary to develop a technic in treating carcinoma of the skin that required a comparatively short period of time. With such a situation the cases presented and the method of treatment was developed.

The technic itself is that of giving x-ray therapy in the form of a single massive dose or in two parts on consecutive days, totalling 4500 r units, or equivalent to ten skin threshold skin erythema doses. The factors used were one hundred peak kilovolts, five milliamperes of current, filtered through 0.5 cm. wood, which is equivalent to less than 0.5 mm. of aluminum with a focal skin distance of fifty cm. The surrounding skin was protected by lead rubber. Such treatment produced ulcerative lesions temporarily but the author claims that the scar on healing is soft and only rarely telangiectatic degeneration occurs. In deeper

lesions the dose is similar but a nine and one-half inch gap, or one hundred thirty-two peak kilovolts are used and one mm. aluminum is added to the filter already mentioned. In speaking of the more resistant lesions the author mentions melanotic malignancies and squamous cell epitheliomas on the extremities. In the latter instance he gives twenty instead of ten skin erythema doses. The danger of widespread metastasis is mentioned. All in all, the small, squamous celled lesions of the lower lip are the most responsive to this type of treatment. At this site he employs the one hundred thirty-two kilovolt technic. Attention is carefully given to any infection existing in the mouth. All cases are followed by a course of x-ray therapy to the lymphatic nodes of the neck. In summarizing the article the author states that this method is efficient and requires but a comparatively small period of time, thereby avoiding hospitalization. Statistics are given covering several years of work in which it is stated that the results obtained by this method are comparable to other accepted forms of treatment. The number of cases treated is very small, however, and the time since treatment was instituted has been comparatively short and, therefore, not conclusive.

Radiation Treatment of Carcinoma of the Cervix.

William P. Healy, M.D., and A. Norman Arneson, M.D. *American Journal Roentgenology and Radium Therapy*, Volume XXXII, Number 5, November, 1934. Pages 646-653.

The purpose of the work done reported in this essay is for controlling malignancies of the cervix and parametria for a longer period of time, and also to increase the percentage of permanent cures of such cases. About fifty to sixty per cent of early cases involving the cervix due to malignant process can be cured by radium alone. However, these form only a small percentage of all cases seen. Some seventy-five to eighty per cent of patients examined already have parametrial involvement. Since radium in the cervical canal is effective not more than three to four cm. away, it was the author's idea to develop a more effective form of external radiation with deep x-ray to cope with the parametrial involvement at a more distant field. In order to carry out this idea at Memorial Hospital the following factors were used with their deep x-ray therapy: 200 kv., 30 m. ap. current, 70 cm. target skin distance, 0.5 m. cu., plus 2 mm. al. filtered, two anterior and two posterior in portals, 10x15 cm. in size, two hundred r per field every forty-eight hours. The administration of the deep x-ray therapy requires about three weeks. Immediately following this, radium therapy is carried on, using approximately 1500 millicurie hours with two mm. brass in the vagina against the cervix. Two radon capsules are placed in the cervical and uterine canals for 3000 millicurie hours, filtration being 0.5 mm. gold and 2 mm. black rubber. This work was carried on in connection with the pathological department of the Memorial Hospital and it was possible to obtain seventeen cases from which biopsies were taken at three to five days intervals during the course of the x-ray therapy. Microscopic examinations showed a negative report as far as malignancy was concerned by the fourth week. Although the lesion was clinically well, it was possible to find radioresistant cells that were recurring in later weeks in those cases in which only radium had been used. The original article contained two diagrams showing the threshold erythema doses in various areas at and surrounding the cervical canal. The first one shows that obtained by x-ray therapy and the second one by x-ray therapy plus radium. It is pointed

out that Gunsett measured the dosage in the cervical canal by means of an ionization chamber and found that two or three threshold erythema doses were insufficient to control malignancy. X-ray alone gives five erythema doses in the cervical region, while x-ray plus radium therapy gives fifteen or above fifteen erythema doses. The regions adjacent to the cervix, that is, in the parametria, are materially increased in their special erythema doses by the new technic employed with the deep x-ray therapy. The authors noted that in their twenty-six cases the tissue dose in the intestines was above five threshold erythema doses, and that there were no complications in the intestines and practically none in the patients generally. As stated at the outset of this article, it is a preliminary report regarding a new technic covering twenty-six cases.

(Editors Note—It may be stated that although this paper was read in September, 1933, this technic has been found to be sufficiently superior to the former method that it is still carried out and is obtaining better results which well be reported in papers at later dates.)

ORTHOPAEDIC SURGERY

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Spondylitis Ankylopoetica Bechterew (Bechterew's Spondylitis Ankylopoetica). Christian Hohne. *Arch. f. Orthop. u. Unfall-Chir.*, XXXV, 277, 1935.

The author discusses the subject of ankylosing spondylitis on the basis of one hundred thirty-nine cases. He particularly differentiates the ankylosing spondylitis from the spondylitis deformans. In the former group there is a localized articular rheumatism of the spine. The etiological factors of rheumatism are infections, among which the rheumatic iritis is found in many cases. The disease is associated with acceleration of the sedimentation time and involves principally asthenic individuals in the earlier ages. It begins insidiously and shows the bridge symptoms of indefinite rheumatic character, sometimes also intestinal signs of gastric pain, but without clinical or roentgenographic findings at first. Diagnosis can be made only after many years following the onset of the disease, when the stiffening of the spine is already far advanced. The x-ray finding is characterized by calcification of the sacro-iliac joint, calcification of the ligaments and the small joints of the spine, and demineralization of the bone. A number of roentgenograms are introduced.

The spondylitis ankylopoetica of the author coincides largely with the Strumpell-Marie type, but is distinguished from the spondylitis deformans.

On the other hand, the author does not acknowledge the different points of distinction between Strumpell-Marie and Bechterew types, since the different symptoms merge into each other.

Pott's Paraplegia: Prognosis and Treatment. H. J. Seddon. *British Journal Surgery*, XXII, 769, April, 1935.

Pott's paraplegia is classified according to three types. Type I is a paraplegia with early, active disease; Type II is associated in its onset with early, active disease, but it persists indefinitely; Type III occurs after a tuberculous spine appears to have healed.

The writer advocates conservative treatment in

the first type. He advocates costo-transversectomy in the severe case which promises to be persistent and incision of abscesses in the cervical region.

He is against operation in the second group if there is an acute thrombosis of the vessels supplying the cord. Laminectomy is done when the spinal-tumor syndrome is present or when there is posterior spinal disease. If there is compression by a sequestrum, the sequestrum should be removed. Costo-transversectomy is done in a few cases. Hyperextension is important in some cases.

The third stage may be prevented by efficient treatment of the tuberculous spine. Treatment is conservative with laminectomy and graft in the more serious cases.

The Orthopedic Treatment of Chronic Arthritis. Ellis Jones. *California and West. Med.*, XLIII, 125, August, 1935.

The author discusses the pathology and treatment of the atrophic and hypertrophic forms of arthritis, laying special stress upon early preventive measures and pre-operative treatment. He finds the most satisfactory results are obtained by the use of the Bristow-Smart coil and the Morton Smart unit in increasing blood supply to the joint. This is followed by the proper form and amount of physiological exercise and massage, which in most cases is induced automatically by the painless muscular contractions which these instruments induce. He also employs potassium iodide cataphoresis by means of a strong galvanic current.

Operative treatment is of relatively small use in the atrophic type, but is often of decided advantage in the hypertrophic type, especially in arthroplasties, removal of loose bodies, synovectomies, and stabilizations.

SURGERY AND GYNECOLOGY

Abstracts, Reviews and Comments from
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Repeated Cesarean Section Complicated by Rupture of the Uterus a Few Minutes before Operation (Cesarienne Iterative Complique de Rupture Uterine Quelques Minutes Avant l'Intervention). Leon Gerin-Lajoie, *L'Union Medicale du Canada*, December, 1935.

The general surgeon finds it necessary sometimes to express an opinion with reference to the advisability of operative procedures in connection with obstetrical situations. With that in mind, this article by Gerin-Lajoie is not only of general interest, but indicates the particular wisdom of paying attention to the possibility of accidents in the case of pregnancy following repeated Cesarean sections.

A woman about twenty-five years of age, pregnant eight months, entered hospital April 28, 1934, about eight p. m. She came because she had had pains since noon of the same day—a period of eight hours during which she continued the performance of active duties about her home.

There had been five previous pregnancies at term. In the first two forceps were employed, the delivered infants being dead and mutilated. In the three following Cesarean sections were done, all infants living.

Measurements showed greatly contracted pelvis.

On admission, the fetal heart rate was 110. Fifteen minutes later it was 140. An hour later as

patient was being taken to operating room it was 60 or less.

The abdomen was opened. There was much free blood in peritoneal cavity. After rapid separation of adhesions following the former operations, it was discovered that there was an extensive rupture of the uterus at the site of scar tissue in its walls.

The fetus was in upper abdomen. Efforts to resuscitate after rapid delivery were unsuccessful.

A subtotal hysterectomy was performed. Patient was not doing well. A Mickulicz pack was put in to central oozing. A few wicks were placed for drainage. The abdomen was closed by through and through sutures (on ferme la paroi en un plan). Physiologic saline solution intravenously (the article is not perfectly clear on the route, but it is assumed that saline solution was given intravenously). Rapid improvement. Discharged on eighteenth day after operation.

The article is terminated with the emphatic warning that the pregnant woman who has had a Cesarean section, and particularly if she has had multiple sections, ought to report at the moment the first pains are noticed, even if it should be several weeks or a month before the time of expected confinement. In that way only can the best interests of mother and infant be safe-guarded. To be more explicit, the author indicates that in the case of pregnancy following multiple sections operation ought to be done as soon as possible after the beginning of labor pains.

COMMENTS: Looking at the matter from the point of view of the patient's best interests, the employment of through and through sutures for closing the abdomen when the patient is in shock is to be commended. As a matter of fact, it is a very satisfactory way to close the abdomen in any case, provided the sutures are properly placed.

The Mickulicz pack is of great service when there is troublesome oozing in the pelvis. It probably should be employed more often in this country.

LeRoy Long.

Exploration of the Recto-Sigmoid in Low Neoplastic Occlusions. (L'Exploration Recto-Sigmoïdienne dans les Occlusions Basses d'Origine Neoplasique). Mercier Fautaux. *L'Union Medicale du Canada*, December, 1935.

This is a very practical communication in which the dangers of both barium suspensions by either mouth or rectum, and instrumental examination are indicated. The dangers are in connection with pathological changes just proximal to the neoplasm. A series of operative and autopsy findings indicate various and important structural modifications (modifications structurales diverses et importantes). There is usually considerable distention, and frequently there are friable parietal walls and deep ulcerations. The walls are often extremely thin, and the presence of a perforation, either protected by adherent adjacent structures, or communicating with the free peritoneal cavity. The author has collected six typical cases showing the dangerous pathology indicated, all of them dying either before or soon after surgical intervention.

The conclusions are:

1. When an obstructing neoplasm of recto-sigmoid is suspected the employment of suspensions of barium or like material is fraught with extreme danger.

2. Proctoscopic examination ought to be done with utmost care.

COMMENTS: Since the dangerous pathology

is proximal to the occluding neoplasm, or any other process producing occlusion, I emphatically agree that barium or like suspensions should not be given by mouth. I have seen an almost complete occlusion made entirely complete, with proximal perforation following the oral administration of a suspension of barium. In my judgment, these dangers are imminent not only in neoplasm of recto-sigmoid, but in the presence of obstruction anywhere in the intestinal tract, and particularly if the symptoms are at all indicative of complete obstruction.

The employment of a barium suspension per rectum is not so dangerous, provided that judgment and care are exercised.

LeRoy Long.

The Treatment of Carcinoma of the Cervix by Wertheim's Operation. Victor Bonney, London, England. The American Journal of Obstetrics and Gynecology, December, 1935, Page 816.

(Comment: There is a tendency, particularly in this country, to look upon radiation as the only adequate treatment for carcinoma of the cervix today. There is also the feeling that any advance in the treatment of carcinoma of the cervix will be along radiological lines, and that operative treatment has no place in the care of these patients. No one can foretell the future improvements in the treatment of carcinoma of the cervix. Certainly the facts, such as contained in Mr. Bonney's work, demonstrate the hazards of hastily discarding and abandoning all operative measures. That a combination of surgery and irradiation may be the best treatment is certainly within the bounds of experience and reason, though at the moment we look upon irradiation treatment as the best one applied to our present circumstances.

It is particularly valuable, therefore, to review the work of Mr. Bonney who is probably the most capable man in the world in the performance of the Wertheim operation and who has consistently since 1907 done this operation in at least sixty-three per cent of the patients with carcinoma of the cervix that he has seen.)

* * *

Mr. Bonney has given his results upon the basis of five years freedom from recurrence and afterward upon the basis of ten years freedom of recurrence, because he states that ten per cent of all recurrences appear between the fifth and tenth year. He has classified his cases according to whether the regional glands removed at operation were or were not carcinomatous.

The incidence of regional gland involvement in his series of cases is forty-two per cent.

Mr. Bonney has performed the Wertheim operation four hundred eighty-three times. Confusion with irradiation treatment is avoided because the very few cases operated upon who had had pre-operative or post-operative irradiation were all dead at the end of five years. He has operated upon sixty-three per cent of all of the patients seen—that is, an operability rate of sixty-three per cent.

Of three hundred eighty-four patients reported on the basis of five-year freedom from recurrence, one hundred fifty were living and well, or a five-year cure rate of thirty-nine per cent. In this group one hundred fourteen had no gland involvement and were well at the end of five years—that is, a cure rate of fifty-one per cent. Where the glands were involved, cure rate for five years was twenty-two per cent.

Of the two hundred eighty-three patients reported upon the basis of ten-year results, eighty-two were

living and well at the end of ten years, or a ten-year cure rate of twenty per cent.

Mr. Bonney reports "actual operative achievement" upon the basis that he has operated upon sixty-three per cent of the patients seen. On the basis of five years freedom from recurrence he reports his actual operative achievement as 24.6 per cent. On the basis of ten years freedom from recurrence his figures show eighteen per cent. In Mr. Bonney's experience quite a large number of patients were lost sight of in the follow up and they are reckoned in the above figures as having died of recurrence. With such a large number he feels that it is not quite fair to assume that all of these patients have so died. Of course, in the event that they are not so calculated the results are considerably improved. He feels, also, that when sixty-three cases are operated upon out of a hundred there will be a few cures in the remaining thirty-seven, which will be treated by irradiation, thereby increasing the total number of cured out of a hundred.

The technique as employed by Mr. Bonney is given with a number of excellent illustrations.

COMMENT: Despite the very decided statements made by some gynecologists and radiologists concerning the treatment for carcinoma of the cervix, most of us feel that the ultimate perfection has not yet been attained and that by no means need it be limited to a consideration of improvements along radiological lines alone. Mr. Bonney's contribution has been a very valuable one in determining the experience to be expected in expert hands with pure surgery alone.

Wendell Long.

The Estrogenic Principle, the Common Etiological Factor of Endometrial Hyperplasia, Uterine Fibroids and Endometriomas. J. Thronwell Witherspoon. Surgery, Gynecology and Obstetrics, December, 1935, Page 743.

It is the hypothesis of this paper that endometrial hyperplasia, uterine fibroids and endometriomas have a common etiological background in excessive stimulation by the ovarian follicular hormone. It is felt that the action of this hormone is not specific to the uterine endometrium alone but acts upon the genital tract as a whole. When this action on the endometrium is abnormal, causing endometrial hyperplasia, it is equally abnormal in its action upon the myometrium, causing bicellular metaplasia of the uterine muscle cells, the subsequent development of uterine fibroids.

Considerable space is devoted to a discussion of the etiology of these three conditions.

The clinical data upon which this paper is written is to be found in the following quotation:

"The present paper is two years' additional evidence in support of a cause and effect relationship between multiple follicle cysts of the ovary, with excess estrogenic hormone secretion, immediate production of endometrial hyperplasia, and more latent development of uterine fibroids, if the stimulation is sufficiently prolonged.

Forty-four cases of endometrial hyperplasia were studied. On each patient a curettage was performed and the curettements diagnosed microscopically as hyperplasia of the endometrium. In no case, either by bimanual examination or with the curette, was a uterine fibroid noted. In addition, twenty of the cases (forty-five per cent) had a laparotomy performed and in no instance was a fibroid found, but in every case multiple follicle cysts of the ovaries were observed. After varying intervals, the average being four years and nine months, all forty-four

patients returned for a second operation because of uterine fibroids, and the findings of the endometrium, myometrium, and ovaries at the time of the second operation, are here offered as evidence of an inter-relationship between multiple follicle cysts of the ovary, endometrial hyperplasias and uterine fibroids."

"These forty-four cases of endometrial hyperplasia, on which a second operation was performed on an average of four years and nine months later for fibromyomatous growths of the uterus, are convincing evidence of a cause and effect relationship of the prolonged and unopposed action of the ovarian follicular hormone on the myometrium and the subsequent development of uterine fibroids. Evidence has been sufficiently advanced for the general acceptance of hyperestrin stimulation of the ovary from multiple follicle cysts as the cause of endometrial hyperplasia. The excess of action of this hormone or its dysfunction is not limited solely to the endometrium; all of the genital tract is stimulated to hypertrophy and hyperplasia by its action. The contention of this paper is that when this hormonal stimulation is of sufficient strength or when its action is unopposed over a lengthy period, it is the igniting factor which causes cellular metaplasia of one or of several of the uterine muscle cells, with the subsequent development of uterine fibroids."

Much is written concerning the etiology of endometriomas, but the following quotations summarize the theory and experience of this author: 'In a former contribution (35) while studying the relationship between endometrial hyperplasia and uterine fibroids, the high incidence, thirty per cent, of ovarian endometrial transplants was noted. At that time the suggestion was made that these three conditions might possibly have a common etiological background. These figures have been rechecked and, together with the findings in the present paper, ovarian and uterine endometriomas were associated with endometrial hyperplasia and uterine fibroids in sixty-four per cent of the cases, a figure far too high to make such a finding mere co-incidence."

"Therefore, it seems logical to deduce that the multiple follicle cysts of the ovaries, in the absence of corpora lutea, which cause, through the action of the estrogenic principle, endometrial hyperplasia, likewise cause the ectopic endometriomas."

This author's conclusion is as follows:

"The hypothesis that all forms of overgrowth of the uterine endometrium or musculature are due to the same factor, the estrogenic principle, is not only supported by clinical and pathological data, but also explains satisfactorily the simultaneous development of endometrial hyperplasia, endometriomas and uterine fibroids, with their associated clinical features, hemorrhage and sterility."

COMMENT: There is much to support this hypothesis, particularly in the work of the German investigators. Some doubt is encountered when large series of fibroid tumors are reported with only about fifty per cent co-existent polycystic ovaries. However, in evaluating such reports one must remember that there will be certain variations in opinion as to which ovaries are described as polycystic.

As to the stimulation of growth of fibroid tumors by ovarian hormone, there can be no question. The exact mechanism involved in etiology is a very interesting study.

Wendell Long.

INTERNAL MEDICINE

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By C. E. BRADLEY, M.D.

Osteomyelitis in Infancy. William Thomas Green, M.D., Boston, Mass. *Journal A. M. A.*, Volume 105, Number 23, December 7, 1935.

Because of the great differences in cases of osteomyelitis in infants under two years of age, and in older children, the author presents a summary of those differences and illustrates them with three cases of infantile osteomyelitis from his practice.

In the first place, sixty-three per cent of the cases of infantile osteomyelitis are caused by streptococci, while ninety-one per cent of the cases of osteomyelitis in older children are caused by staphylococci which produce greater damage, and cause the lesion to be more difficult to heal; often such a lesion is accompanied by sequestration and often recurs finally leaving residual sclerosis of the bone. Usually infantile osteomyelitis is of comparatively short duration, and can be completely healed, with infrequent sequestration and rare recurrences.

The first two cases reported were in an infant girl, fifteen months of age, and a boy, one year of age. The girl suffered from osteomyelitis of the right humerus and treatment, which consisted of immobilization of the extremity with poultices and incision and drainage of an abscess in the soft tissue, was instituted two days after symptoms were noticed. The lesion was completely healed as shown by clinical and roentgenological examination in six weeks. The boy suffered from osteomyelitis of the femur. The treatment instituted was the same. The wound healed in two and one-half months, and an examination made six months later showed the extremity to be clinically normal. The causative organism in the first case was streptococcus haemolyticus, and in the second case, was staphylococcus aureus.

The third case was an infant, one month of age, who suffered from osteomyelitis of the humerus caused by staphylococcus aureus. Drainage of a secondary abscess and immobilization of the part resulted in complete healing in six weeks. Three years after the onset, the extremity was functioning normally on physical examination.

These cases are quite typical and as often occurs showed systemic disturbances before a definite lesion could be located. Often upper respiratory infection is an antecedent of osteomyelitis and fifty-five per cent of the cases in the author's series showed evidence of antecedent infection.

There are a few other conditions which might be confused with infantile osteomyelitis. Septic joint may be recognized by the presence of palpable fluid in the joint with extreme muscle spasm and local sensitivity; however, it must be remembered that septic joints occur quite frequently secondary to osteomyelitis.

Deep abscesses are common in infancy and often can be differentiated from osteomyelitis only upon operation. If the physical signs are maximal away from the metaphysis it is suggestive of abscess.

Scurvy and syphilis may be differentiated by history, multiplicity of lesions, and roentgenograms. Tuberculosis is not difficult to differentiate.

The most important contribution which the author offers from this series of cases is the importance of treating the child, by allowing locali-

zation, and by carrying out the minimal surgical procedures.

The Use of Unsaturated Fatty Acids in the Treatment of Eczema (Atopic Dermatitis, Neurodermatitis). Samuel J. Taub, M.D., and Samuel J. Zakon, M.D., Chicago, Ill., *Journal A. M. A.* November 23, 1935, Volume 105, Number 21, Page 1675.

In 1929 Burr showed through animal experiments that a fat deficient diet produced scaliness of the skin, necrosis of the tail, cessation of growth and pathological changes in the kidneys; these symptoms disappeared when unsaturated fatty acids were added to their diets.

In about 1933, Hansen's studies showed that in eczematous babies the iodine absorption value of blood serum was low, and that it increased as the eczematous condition improved. He also found that he could raise the absorption level by feeding linseed oil, and reported a number of clinical cures from this type of therapy.

The author's purpose is to condemn the claims that various pharmaceutical houses are making for various products, containing these unsaturated fatty acids, on the basis of these preliminary investigations.

The authors' studies were made over a period of eight months; they used the products advocated by Hansen, but were unable to corroborate his findings. In fact one of their series of eight patients, who followed the treatment religiously, developed oily cysts and furunculosis. Another developed a severe attack of asthma—of course it is well known that linseed oil products often provoke asthmatic attacks. In none of the patients could the authors see any improvement in the clinical aspects of their patients.

Use of Convalescent Blood in Whooping Cough. With a Review of the Literature. William L. Bradford, M.D., Rochester, N. Y. *American Journal Diseases of Children*, Volume 50, Number 4, October, 1935, Page 918.

The author presents a study of the use of convalescent blood, and serum, as well as ordinary whole blood in the prophylaxis of whooping cough to determine if the results were similar to those obtained in similar studies of other diseases which are caused by filterable viruses. It has been proposed that there is a symbiotic relationship existing between *Bacillus pertussis* and an, as yet unidentified or determined, virus.

The author presents a very complete review of the literature on this subject, and then presents his own study of seventy-seven children chiefly under three years of age.

Twelve children were given convalescent serum and fifteen were given whole blood during the incubation period. Fifty-five per cent contracted whooping cough; and sixty-six per cent of those who did had a mild form of the disease, while only one had complications, tonsillitis, in six weeks.

Forty per cent of the series of twenty control patients had a mild form of whooping cough, while four had complications of otitis media, bronchitis, and pneumonia.

Nine children were given convalescent serum and eight were given whole blood during the catarrhal period. Forty-one per cent had a mild form of whooping cough.

Forty-six per cent of a series of thirteen control patients had a mild form of the disease and one developed pneumonia.

The author concluded that immune serum or whole blood is effective in the prevention and modification of whooping cough if given before the catarrhal symptoms develop, but that it is of little or no benefit if given after the disease is established. He also notes the similarity between these results and those obtained in recent studies of measles which is caused by a filterable virus.

By HUGH JETER, M.D.

Toxicology in Children. A. O. Gettler and A. V. St. George. From Chemical Laboratories of Bellevue Hospital and of Washington Square College, New York University, New York City. *American Journal of Clinical Pathology*, Volume V, November, 1935. No. VI.

In this the authors have presented some cases and practical methods of handling various types of cases in which children have been poisoned. Accidental poisoning has been emphasized. In each instance illustrative cases are given, also technical information concerning the proper method of detection of the poison. Methods of treatment are also outlined. The following are enumerated:

BORIC ACID POISONING: No specific treatment is recommended. Attention is called to the possibility of chronic boric acid poisoning which is not generally recognized but may result in infants by using numerous unwashed nipples which may be kept in boric acid solution. "Three infants were each given a hypodermoclysis of 150 c.c. of saturated boric acid solution instead of a physiological saline solution. It was estimated that each received between 5.5 and 7 grams of boric acid, whereas the average adult fatal dose is three to five grams. Soon after the administration of this solution, the infants began to cry out and writhe in pain. Salivation, vomiting, diarrhea, bloody urine and delirium followed in rapid order. The skin became cyanotic, cold and clammy and death followed within three and one-half hours to four hours."

SODIUM CARBONATE (WASHING SODA) POISONING: "A hospital nurse made up the feeding formulas for her charges, taking the lactose from a tin container, as usual. Shortly after the babies were fed, they became violently ill, with vomiting, diarrhea, tetanic contractions, collapse, coma and three of the patients died." "The white powder in the tin container, labelled lactose was examined and found to contain twenty-eight per cent lactose and the remainder was sodium carbonate. Investigation failed to reveal how the soda got into the milk sugar."

POTASSIUM CHLORATE POISONING: "A three-year old developed a sore throat. The physician gave directions, over the telephone, to make up a potassium chlorate solution, to be used as a gargle. The mother misunderstood the directions and gave the child the solution to drink. (Average fatal dose three to five grams.) After several doses the child became seriously ill, with vomiting and diarrhea, clammy skin, dyspnea, cardiac weakness, and a gradual change of the tint of his skin to a pale bluish green, especially pronounced on his lips, nose and forehead. He died in about six hours. Icterus and nephrosis with oliguria have been noted in some cases of chlorate poisoning."

ETHYL ALCOHOL POISONING: "An infant (age four months) in a hospital received by hypodermoclysis one hundred twenty c.c. of ninety-five per cent ethyl alcohol instead of physiological salt solution. The patient immediately began to cry and struggled violently. He became unconscious, the

body surface became cold, a subnormal temperature was observed and there were several convulsions, with deep coma, and death after sixty hours. Chemically large amounts of alcohol were found in the organs. It should be noted that children are extremely susceptible to alcohol."

ARSENIC POISONING: "Acute arsenic poisoning in children usually results from careless administration, generally of Fowler's solution or accidental ingestion of the poison. Cases of chronic arsenic poisoning have resulted from prolonged administration of it, or from prolonged ingestion of foods, for example, arsenic sprayed vegetables and fruits. The latter cases occur a great deal more frequently than one suspects, and frequently children with vague and obscure symptoms will, especially if the arsenic is mobilized, show arsenic in the urine and feces."

PHOSPHORUS POISONING: "Among our cases we have had one of acute phosphorus poisoning in a two and one-half year old child who had eaten a quantity of home-made sweetened roach paste containing phosphorus as a principal ingredient. It was estimated that thirty-six hours after ingestion, the child suddenly developed vomiting, repeated convulsions, diarrhea, jaundice, coma, collapse, and death within fifty hours. Treatment was of no avail."

ANILINE AND NITROBENZENE POISONING: "A most interesting case of aniline and benzene poisoning at Bellevue Hospital was reported by Graves. A girl aged five with a negative history was admitted to the hospital in partial collapse about four p. m. The patient seemed well until two p. m. Then developed headache while riding in subway accompanied by her mother. The patient and mother had been to a restaurant and had an ordinary dinner. As they were leaving the restaurant the mother noticed that the child had lost her normal color, and few minutes later the child collapsed in the street. An ambulance brought her to the hospital. At the hospital the examination revealed a well nourished child, in semi-stupor, with circulatory weakness. Temperature, 98°; pulse, 104; respirations, 20. The quality of pulse was not good, heart irregular, lungs not obstructed; there was a general cyanosis, most marked in the lips, tongue and finger tips. There was a leucocytosis of 20,000, a hemoglobin content of 82 per cent, and a trace of albumin in the urine. At eight p. m. the patient was still in a semi-stupor, and cyanotic with a weak irregular pulse. Treatment given was digifolin, caffeine, sodium benzoate, atropine, and a mustard bath. At this juncture it was suggested that an extrinsic toxic agent was responsible. The mother denied contact with gas, headache powders, paint, radiator enamel, roach paste, roach powder, et cetera. Finally, after much questioning, the mother remembered that the child had donned a newly dyed pair of suede shoes. Thereupon ten c.c. of blood was removed from the patient. The blood had a mahogany color and showed methemoglobin with the spectroscope. At eleven p. m. a transfusion was given. There was almost immediate transformation for the better. The child left the hospital on the second day entirely recovered. Analysis of the shoe dye revealed aniline, and benzene."

BENZENE POISONING: "A boy, aged thirteen, was in the habit of frequenting a shoemaker's establishment. To the rear of the store was a small room in which the proprietor kept his rubber cement. The boy spent much of his time in this room. One cold winter's day, he remained in the room much longer than usual. The proprietor opened the door to see what was going on, and

found him collapsed over the table. On examining the scene, the medical examiner found a large five gallon tin can with the cap off, standing on the table. A large stain was found on the table and floor."

LEAD POISONING: "We have recently had an interesting case of a two and one-half year old male child admitted to a hospital in a neighboring city with a history of continued convulsions of only a few hours' duration. Examination of a blood smear made in the course of a routine blood count revealed intense basophilic stippling. This made the interne suspicious of lead poisoning, and careful inquiry from the mother elicited the fact that the child had bitten and scratched a good deal of the paint off his enameled bed. We examined the urine and feces for lead and found considerable quantities of it." Lead poisoning in children is not uncommon. It causes secondary anemia and may be acute or chronic. Unlike the adult, children manifest paralysis more often in the lower rather than the upper limbs. Lead encephalopathy is the most serious of the manifestations. Radiographic changes occur in the form of a band on increased density at the end of long bones.

"Three types of cases in which lead poisoning may be suspected are: (1) convulsions of obscure origin, or cases of sterile meningitis; (2) cases showing papilledema with or without ocular palsy, for which no cause can be found, and (3) anemic children who suffer from colic, constipation and irritability or in whom signs of peripheral limb palsy are found."

In conclusion emphasis is placed upon the importance of saving vomitus and the first gastric lavages, urine and feces, and having these chemically examined during life in suspected cases of poisoning.

Treatment of Acute Alcoholism, With Ten Per Cent Carbon Dioxide and Ninety Per Cent Oxygen Inhalation

Leon J. Robinson and Sydney Selesnick, Boston (Journal A. M. A., November 30, 1935), state that acute alcoholic coma with dangerous respiratory depression, paralysis and cyanosis is a medical emergency. Death may be definitely prevented and recovery accelerated by inhalation of a mixture of ten per cent carbon dioxide and ninety per cent oxygen for a length of time sufficient to re-establish and maintain normal respiration and color even after the inhalation is suspended. A minimum of half an hour should be observed. If necessary, the inhalation may be carried out longer. An accelerated decrease in venous blood alcohol levels is produced by carbon dioxide-oxygen inhalation over a period of thirty or more minutes, indicating an accelerated decrease in total body alcohol. No significant blood sugar observations were recorded either before or after carbon dioxide-oxygen therapy. In alcoholic intoxication there was a tendency to lowered blood carbon dioxide capacity. No appreciable change and no carbon dioxide retention was produced by carbon dioxide-oxygen therapy. The blood lactic acid content was elevated in alcoholism but was unaffected by carbon dioxide-oxygen therapy. The purpose of the carbon dioxide-oxygen therapy is not to arouse completely a comatose alcoholic patient but to reduce him from a state of dangerous paralytic alcoholism to the less deep stage of anesthesia from which he can safely be expected to recover. The therapy is recommended as an emergency treatment and is not indicated in the general run of moderately intoxicated patients so frequently encountered.

Light Therapy and Roentgen Therapy in Tuberculosis: Present Evaluation

Edgar Mayer, New York (Journal A. M. A., November 16, 1935), points out that light therapy, both natural and artificial, is of definite value in the treatment of some forms of tuberculosis. Natural heliotherapists, especially those working in high altitudes, emphasize solar radiation and arotherapy. On the other hand, those in cloudy climates have stressed the use of artificial lights and still others, on occasion, the x-rays. Benefits are undoubtedly obtained by patients suffering from tuberculosis of the bones, articulations, peritoneum, intestine, lymph nodes and larynx when the entire body is exposed to carefully graded doses of natural sunlight or to radiation emitted by certain artificial sources of light rays. The beneficial results of such irradiation are due not only to ultraviolet rays. The visible and infra-red rays, as well as the conditions of the atmosphere, play a certain part in the therapeutic effect. In tuberculosis of the skin, lupus vulgaris alone can be said to respond specifically to light. Scrofulodarma and erythema induratum react favorably at times to general and local exposure, although not as constantly. Lupus erythematosus does not respond to and may be aggravated by light. In tuberculosis of the bones and articulations, it is generally agreed that suitable, graded exposure to natural sunlight is most effective in aiding the healing accomplished by orthopedic and other measures. Exposure to artificial sources is a second choice. Pulmonary tuberculosis is not an indication for light therapy; stationary pleural tuberculosis has often been helped by this measure. Genito-urinary tuberculosis deserves a trial of such treatment in combination with other measures. Local exposure to ultra-violet rays of circumscribed tuberculous lesions of the urinary bladder has been shown to yield favorable results, but the method requires special applying devices and, above all, skillful treatment of the bladder lesion. Ocular tuberculosis and aural tuberculosis respond infrequently to light. Oral tuberculosis is most resistant. Fistulas are often resistant to such treatment. Post-operative sinuses, in contrast, are most responsive. Intestinal, peritoneal and lymph node tuberculosis especially indicate light therapy and often are rapidly responsive. In tuberculosis, over-dosage has produced harmful focal reactions. Here light may set up a focal reaction similar to that of tuberculin. The erythemic reaction is an accurate indicator of skin tolerance. With any form of tuberculosis, light is to be used merely as an adjuvant and should be combined with all other indicated forms of therapy. With bone and joint tuberculosis, orthopedic measures combined with light still play the major role. Roentgen therapy of pulmonary tuberculosis has many restrictions and important contra-indications. Its healing effect in certain forms of extrapulmonary tuberculosis has been definitely established, but the limitations must be recognized, dosage carefully regulated, and treatments given only by experts in the field.

Poliomyelitis Following Vaccination Against This Disease

According to J. P. Leake, Washington, D. C. (Journal A. M. A., December 28, 1935), through those responsible for the production of poliomyelitis vaccines, through several health officers and through others, word has come to the United States Public Health Service of the development, at suggestive intervals following subcutaneous and intracutaneous injections of treated poliomyelitis virus, of twelve cases of paralytic poliomyelitis with high fatality. The facts in each case are reported. Par-

alytic poliomyelitis was not epidemic in any of the localities at the time of the occurrence of these cases if these cases themselves are not included in the count. The author believes that to many physicians this series of cases, followed by intervals of from six to fourteen days the injection of one or the other of two different vaccines, renders undesirable the further use of poliomyelitis virus for human vaccination at present. In every case in which the sequence is known, the level of the spinal cord first affected corresponded to the extremity in which the injection was made, paralysis beginning either in the same limb or in the contralateral limb. Although any one of these cases may have been entirely unconnected with the vaccine, the implication of the series as a whole is clear.

Relation of Leukemia of Animals to Leukemia of Man

Jacob Furth, Henry W. Ferris and Paul Reznikoff, New York (Journal A. M. A., December 7, 1935), review some of the contributions to the knowledge of leukemia that have come from experimental studies in animals and attempt to correlate them with the human disease. Leukemia of man is essentially the same disease as leukemia of mice. Both the acute and the chronic forms, lymphoid as well as myeloid, are neoplastic diseases. The immature blood cells in leukemia are malignant cells, which may form tumors or diffuse infiltrations and possess characteristics of their own. Studies of leukemia of the mouse indicate that leukemia, like cancer, is of multiple etiology; its development and manifestations are dependent on intrinsic (genetic) and extrinsic factors. An analysis of these factors in the mouse and their role in the human disease requires further study.

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Number 2

Massive Onlay Bone Grafts of the Upper Extremity*

W. K. WEST, M.D.
OKLAHOMA CITY

There should always be a distinction between non-union of a fracture and delayed union. Six months or more without evidence of at least beginning callus formation, should be sufficient time for a fracture to be called non-union.

The causes of non-union are as follows:

- (a) Compound fractures.
- (b) Frequent change in plan of treatment.
- (c) Too early removal of fixation.
- (d) Open reductions, especially where metal has been used without sufficient external splinting.
- (e) Multiple fractures where callus formation is retarded because of multiplied demand. For example, in cases of fracture of the humerus, radius and ulna of the same arm, the surgeon should expect delayed union in one or more fractures; and, therefore, adequate fixation should be maintained over a relatively longer time.

Massive autogenous onlay bone grafts have been found to be the most successful in cases of non-union in bones of

the arm. The other types of grafts commonly used are inlay, intermedullary, and osteoperiosteal. Campbell and Henderson are very enthusiastic concerning the massive onlay type of graft. The technique in our cases follows closely that of Campbell.

Inlay grafting is ideal for fractures of the tibia; but, in the arm, the bones are so small that the cutting of a trough for insertion of a graft weakens the bone materially and operation is slower because of the greater detail necessary in accurately fitting the graft.

The intermedullary graft is better suited to fresh fractures where mechanical rather than osteogenetic assistance is necessary, as it has been found to be an obstruction in the marrow cavity and the percentage



FIGURE 1

A
Ununited fracture of clavicle, eight months' duration. Patient age thirty.

B
Massive onlay graft with good apposition and fixation of bone fragments.

*Read before the Surgical Section, Annual Meeting of Oklahoma State Medical Association, Oklahoma City, May, 1935.

of failure is greater in case of true non-union.

The osteoperiosteal grafts have osteogenic power but have no mechanical strength.

The onlay graft should be autogenous. While it is possible to obtain good results in the use of beef bone onlays, they, too, are better suited to internal fixation of fresh fractures. Autogenous grafts will unite with the flattened shaft of the small bones of the arm and the graft is large enough to withstand considerable strain without breaking.

In our cases we use the autogenous bone pegs in fixing the graft to the bone fragments. The pegs are cut from the tibia at the time the graft is removed. It has been found convenient to prepare eight pegs; six is usually a sufficient number, but two extra pegs may be useful because of danger of breakage or contamination.

Square pegs are used, since a glass stopper fit is unnecessary.

Before the graft is ap-

plied, the connective scar is removed from the fracture area. The marrow cavity is drilled out through the ends of the fragments. The sclerotic fracture surfaces are denuded in order that fresh bone be approximated to fresh bone. The cortex of each fragment is flattened by the use of a sharp bone chisel. After the graft is placed on the flattened cortex, bridging across the fracture line, six drill points are used to fix the graft to the bone and



FIGURE 2

A and B: Anterior-posterior and lateral views of ununited fracture of middle third of humerus, fourteen months' duration. Patient age forty-two. Note that there has been no effort at callus formation.

C and D: Lateral and anterior-posterior views, nine months after successful massive onlay graft.

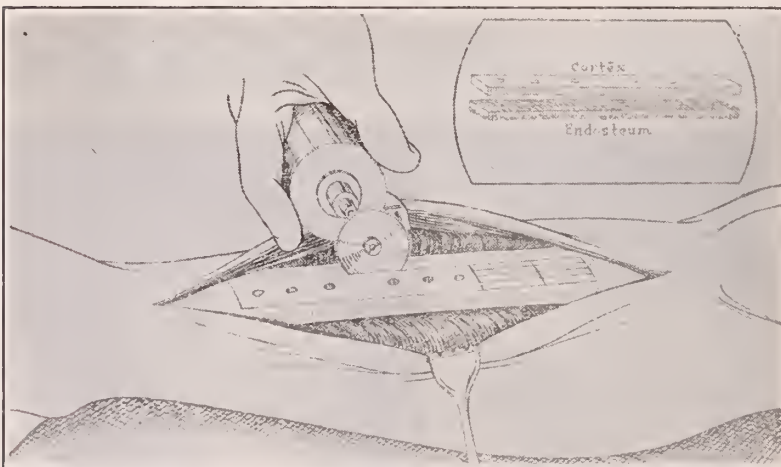


FIGURE 3

Illustrating removal of graft from tibia. By means of electric motor saw, eight autogenous bone pegs are cut from the upper tibia and six holes drilled in the graft proper, before its complete removal.

Insert illustrates removal of endosteum from cortex. The endosteal bone may be used later in filling any defects around the fracture area.

each drill point is left in the drill holes to maintain fixation until the bone pegs are introduced. The bone peg is driven through the hole in the graft and through the hole which has been drilled entirely through the shaft of the bone; that is, the autogenous bone peg engages the graft and both sides of the cortex. These pegs are slightly longer than they need be, but the ends absorb later, never causing trouble.

Further stability is added by circling the entire bone and graft with

No. 3 chromic catgut. The wound is closed in the usual manner and, while the arm at this point feels very stable, external fixation is applied which is amply efficient. In cases of fracture of the humerus, a plaster shoulder spica is applied; in the forearm, molded plaster splints, extending from the axilla to the base of the fingers.

Repeated x-rays are taken in order to learn the extent of callus formation. In the humerus, twelve to fourteen weeks' fixation is considered necessary; in the forearm, eight to ten weeks. However, there are no definite rules covering the length of the bone healing period.

There are several points to be considered in doing this type of bone graft surgery.

(1) It is not a simple procedure and trained assistants are considered necessary in order that the operation be done efficiently and in as little time as possible.

(2) There is danger of tourniquette paralysis in major bone operations of the arm. For this reason, we do not use a tourniquette.

(3) In repairing fractures of the lower humerus, radial nerve injuries are not unusual, but wrist drop following the op-

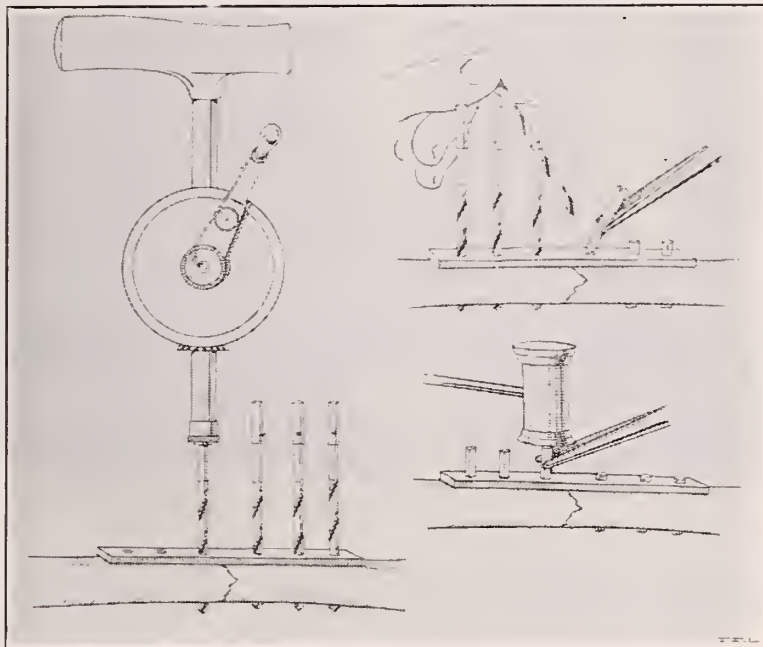


FIGURE 4

Illustrating method of drilling holes into shaft of humerus above and below the site of fracture. Note that holes are made by hand drill and that the drill points are left in place to fix graft until pegs can be inserted. As the drill point is removed, the peg is driven through the far side of the humeral cortex.

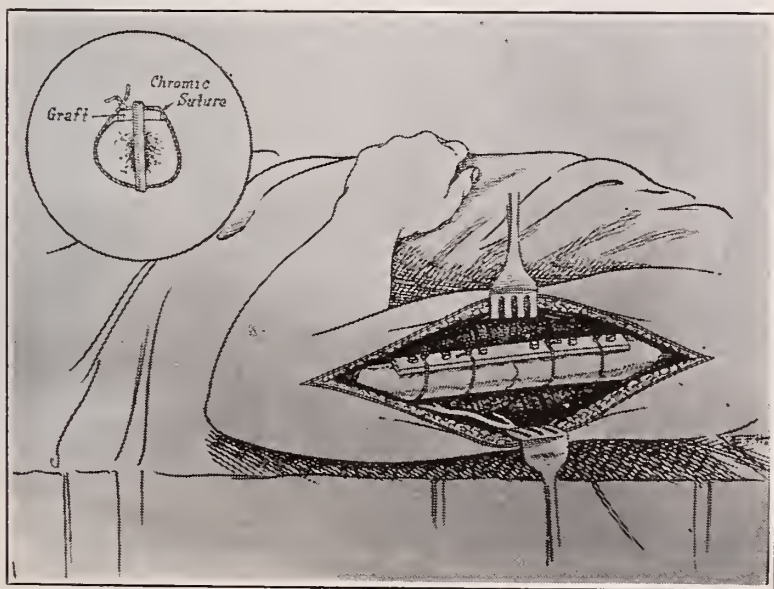


FIGURE 5

Illustrating appearance of massive onlay graft of humerus, after autogenous bone pegs have been driven in and graft further supported by double chromic catgut ties.

eration should not be a cause of anxiety, providing the surgeon is certain that there has been no division of the nerve. Retraction, which is necessary, quite often causes sufficient pressure to cause temporary loss of radial nerve function.

(4) Bone grafts for non-union in infected compound fractures should not be done until one year has elapsed from the time of cessation of drainage.

In case of infection, following the use of the autogenous onlay graft, in the majority of cases,

Two Interesting Pictorial Records of Massive Onlay Bone Grafts

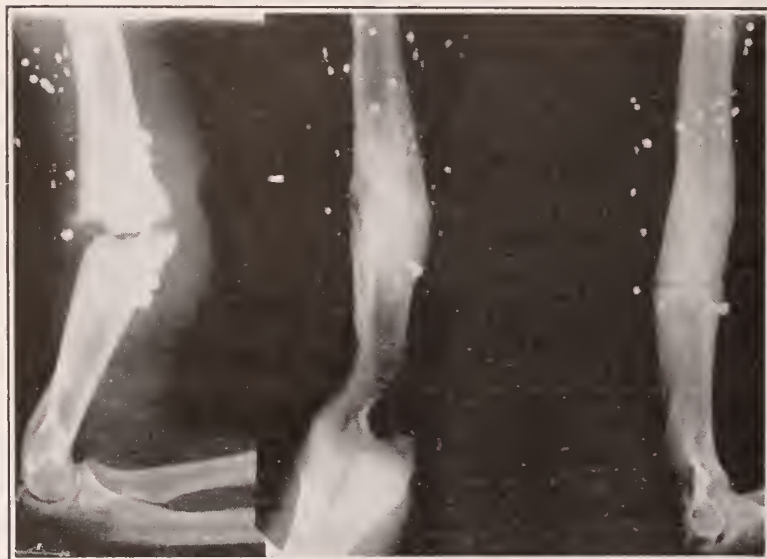


FIGURE 6

A

Non-union of 9 months duration, following shotgun injury. Loose Lane plate has failed to result in union of fracture. Patient age 21.

B

Anterior-posterior view. Appearance of humerus six months following successful onlay graft.

C

Lateral view, after union.

Successful onlay graft following non-union of fracture due to loose Lane plate (left.)

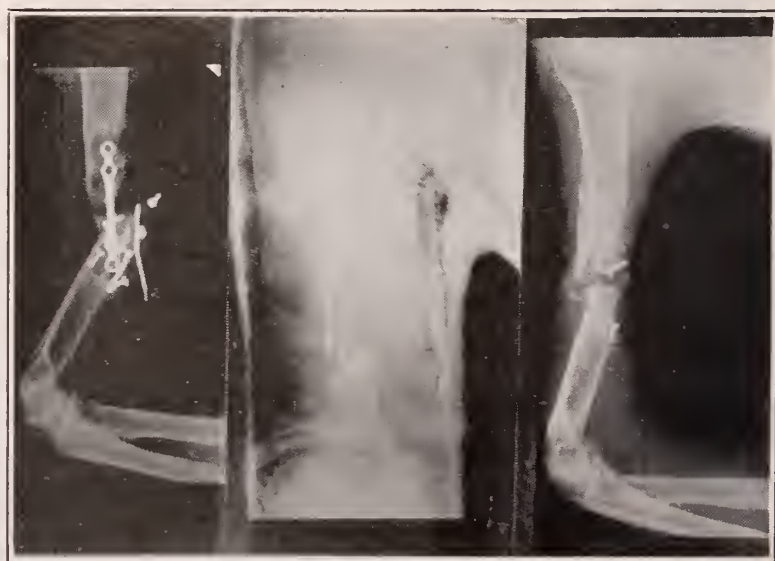


FIGURE 7

A

Non-union, following use of two Lane plates, one year after fracture.

B

X-ray immediately following onlay graft. It was impossible to firmly graft, because of extreme osteoporosis.

C

Shows failure five months after onlay graft. A second graft should be successful, inasmuch as the bone ends have much better density than in View A.

Failure of first onlay graft (right). Second graft recommended.

Successful Grafts After Many Months of Non-Union



FIGURE 8

A

Woman, age forty-nine. Non-union of sixteen months.

B

Failure, six months after massive onlay graft, due to inability to hold graft, because of osteoporosis.

C

Lateral view of humerus, following second massive onlay graft which was successful. The bone ends were much easier to maintain. Note that the upper end of the graft has been driven up into head of humerus.

D

Anterior-posterior view following successful second operation.

Successful results obtained following second onlay graft (left).



FIGURE 9

A and B: Anterior-posterior and lateral views, showing non-union of lower humeral shaft, ten months' duration. Patient is man, age twenty-five.

C and D: X-ray fourteen weeks following massive onlay graft. Result unusually good.

Unusually good results shown (right) fourteen weeks following massive onlay graft.

if external fixation can be efficiently maintained, union will occur in spite of the infection.

(5) The condition of the skin should be perfect in the region of the fracture and in that part of the leg where the graft is removed and it is not feasible to operate through heavy adherent scars.

(6) In cases where metal plates, beef bone or ivory plates, have been used unsuccessfully and have resulted in bone atrophy, it is better to remove them as a preliminary operation to a second or major graft operation. Two operations are necessary, but the first one is simple. Arm cases could be out of bed within a few days. As soon as the x-ray shows the bone structure to be more favorable, the onlay graft should be done.

(7) In the upper humerus, bone atrophy may be quite marked. The soft condition of the bone makes it difficult to maintain internal fixation. The upper end of the graft should be driven up into the head, thus making a very secure anchorage. The lower end of the graft can be

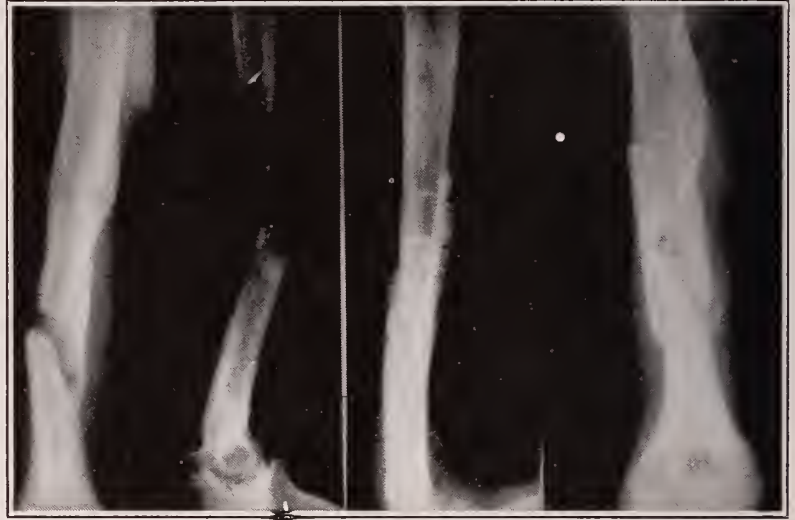


FIGURE 10

A and B: Anterior-posterior and lateral views of humerus. Non-union of eight months' duration. Man, age sixty-four.

C and D: Anterior-posterior and lateral views show good bony union four months after operation.



FIGURE 11

A
Original fracture of both bones of forearm, after fall from horse. Man, age thirty-five.

B
Showing beginning union of radius, but no sign of union of ulna, seven months later.

C
Union of radius and ulna, after massive onlay graft of ulna—ten months after fracture; three months after operation.

maintained, because cortical bone usually is sufficiently solid.

(8) The operation for the bone grafting of both bones of the forearm at the same time, is a very formidable procedure. Therefore, if it is at all possible, conservative treatment should be used until at least beginning union is observed in one bone. We have found that an onlay graft fixation of one bone tends to splint the forearm to a degree that union will be obtained in both bones. In case non-union persists in the unoperated bone, a second bone graft operation may be done. But, to do grafts on both bones at the same time, results in a very long operation and calls

for smaller grafts, or the necessity of removing the grafts from both legs at the same time.

CONCLUSION

Autogenous bone grafts of the upper extremity when done under proper conditions, are successful in a high percentage of cases. The results are undoubtedly much better than when metal plates, wires, or even beef bone plates are used.

However, great care should be taken in the choice of cases; that is, as regards the age of the patient, the length of time since the fracture, and the evidence of beginning callus formation.



FIGURE 12

A	B	C
Non-union of ulna, six months following injury. Woman, age twenty-five.	Lateral view, after union has been obtained by massive onlay graft.	Anterior-posterior view, after union has taken place.



FIGURE 13

A	B	C
Non-union of radius, following application of Parham band. Man, age thirty. Non-union is of one year's standing.	Shows firm bony union eight months following massive onlay graft.	Lateral view, showing union.

Meticulous technique should always be used at the time of operation, the gloved hand being kept out of the wound at all times. Instrumental technique is most important. Skin surfaces should be protected by either towels or sterile stockinette.

No matter how stable the fractured bone seems to be following the application of the massive onlay graft, adequate external fixation must be maintained; otherwise, there is great danger of graft breaking before sufficient callus has been produced.

It is impossible to estimate the number of weeks required for union in any fracture of this type. In our experience fractures of the humeral shaft have been the slowest.

DIABETES MELLITUS*

L. S. McALISTER, M.D.
MUSKOGEE

We as physicians should always be interested in the study of diabetes mellitus. In the large majority of cases, the disease though not curable is amenable to proper management. The properly stabilized patient may even outlive some of his more fortunate though less prudent brothers.

To the diabetic knowledge of his condition is often life saving. For this reason the physician should adopt a teacher-pupil attitude toward his diabetic patients and strive to maintain it until his relationship with the patient ceases or better still until the patient has practically mastered the subject. An educated patient should be instructed to purchase a diabetic manual. After he has studied it a while the physician should ask him practical questions to see if he is gathering knowledge.

Some diabetics are congenital cheaters. Their misdemeanors vary from the simple over-indulgence in sweets to the terrible crime of bringing a bottle of tea to the doctor in place of a urine specimen. This latter incident was related to me by a former preceptor. The patient, a girl of fifteen, finally confessed after having been chastened by several severe attacks of coma.

The maintenance of a nearly uniform concentration of sugar in the circulating blood is a fundamental adjustment of the human body according to Hewlett. Carbohydrate metabolism deposits glucose and other non-saccharides in the alimentary canal which are collected by radicals of the portal vein and carried to the liver, where by dehydration and polymerization in the presence of special hepatic ferments, glycogen or animal starch is formed. This storage process prevents rapid fluctuations in the blood sugar. It is aided by deposition of glycogen in the muscles and the formation of fat from glucose.

Glucose combustion occurs mainly in the muscles, hence the value of exercise in the treatment of mild diabetes. It is also well to recall here that "the fats burn in the flames of the carbohydrates," *i. e.* one gram of carbohydrate is required in the metabolism of 1.5 grams of fat.

The pathological physiology of diabetes is, to say the least, obscure, but something interferes with the normal carbohydrate metabolism in such a manner that a hyperglycemia is the immediate result. A deficient storage of glycogen plays a part in the hyperglycemia that follows ingestion of food. However, the more generally accepted theory is a primary reduction in the capacity of the diabetic body to burn sugar.

It is well to recall here that in normal protein metabolism 0.58 of the total protein ingested will metabolize as glucose and in normal fat metabolism 0.10 of the fat ingested will metabolize as glucose. In diabetic metabolism these two factors contribute to the hyperglycemia. With the possible exception of oatmeal, one hundred per cent of all carbohydrates ingested will metabolize as glucose. May I digress for a moment to recall that van Noorden recognized the tolerance of certain diabetics for oatmeal and made it the basis of the diet which bears his name? He of course withholds all other carbohydrates and limits the ingestion of meat proteins.

To return to the sources of hyperglycemia; Luethje did a pancreatectomy on a dog and placed it on a carbohydrate-free diet. The dog excreted a total of 1,175 grams of sugar over a period of four weeks. Preformed glycogen was calculated to be not more than 232 grams, which corresponds to 257 grams of sugar. Therefore the sugar derived from other sources was not less than 919 grams.

As stated above the source of this sugar is protein and fat, a fact proven in 1910 by

*Read before Muskogee County Medical Society, November 11, 1935.

Pflueger and Junkersdorf. They demonstrated a marked increase in liver glycogen in dogs kept on a strict veal diet for several days. Veal was used because it contains a very small percentage of glycogen. In similar experiments they found that the ingestion of fats did not increase the liver glycogen. This work may be the basis of the low protein, high fat diet of Newburgh and Marsh.

Luethje showed that feeding glycerin to pancreatectomized dogs increased the liver glycogen and resulted in glycosuria. Cremer showed the same in phlorhizinized dogs. Fats are only ten per cent glycerin, so from the standpoint of hyperglycemia they are not very important.

Impaired carbohydrate metabolism results in faulty fat metabolism which in turn produces acidosis, coma and death. Joslin says coma is preventable but we are not preventing it. "Various types of coma may complicate diabetes; but the most common, the most characteristic, as well as the most feared, is that which has been specifically designated as diabetic coma. This well defined clinical entity is characterized by unusually deep respirations (the air hunger of Kussmaul), by a mortality approaching one hundred per cent, and by the presence of the so-called acetone bodies in the urine, tissues, blood and expired air." To this description of Hewlett's we might add a low carbon dioxide combining power of the blood plasma. Any patient with a carbon dioxide combining power of twenty volumes per cent or lower should be treated as a case of coma. The source of all these phenomena is faulty metabolism of fat, with the production of beta-oxybutyric acid, aceto-acetic acid and acetone. I might mention here the non-ketogenic fat called intarvin, introduced by M. Kahn. It is simply the glycerol ester of margaric acid and contains an odd number of carbon atoms which of course prevents oxidation of the beta carbon and the subsequent formation of beta-oxybutyric acid.

The formation of "acetone bodies" is preventable by education of the patient and the maintenance of sufficient carbohydrate intake and metabolism to insure proper combustion of the fat ingested. This can often be accomplished by the bal-

anced diet alone in mild cases but insulin should be used when needed.

The pathological anatomy of diabetes is apparently not definitely settled but the majority of pathologists seem to favor some qualitative as well as quantitative disturbance of the isles of Langerhans in the pancreas.

The symptoms of diabetes are well known, *i. e.* polyphagia, polydipsia, polyuria, loss of weight, obesity, pruritus, weakness, lessening of visual acuity associated always with a fasting hyperglycemia and nearly always glycosuria.

Clinically the physician may encounter a low, medium or high renal threshold for sugar. Diabetes with a low renal threshold for sugar may be differentiated from the normoglycemic glycosuria of renal origin by means of the glucose tolerance test. Diabetics with low or medium renal threshold always pass sugar in the twenty-four hour urine specimen, but the diagnosis is incomplete without the fasting blood sugar test or the glucose tolerance test. Diabetics with a high renal threshold will usually be missed by the physician unless he has a habit of repeatedly examining the twenty-four hour urine specimen. Joslin believes these cases due to renal blockage of sugar as a result of nitrogenous retention. I saw two examples of this during the past year in consultation with the man who found the sugar. He was a urologist who because of his specialty must frequently examine repeated urine samples on the same case.

Both cases passed no sugar in the urine unless the blood sugar was above 230 mgms. Both were obese and both had loss of visual acuity. Both became sugar-free on the balanced diet without insulin but both required large amounts of insulin to keep the blood sugar normal. One at present is taking fifty-four units of insulin daily and her sight has improved. The other survived a prostatectomy but died in coma a week or so later. Both cases showed a low insulin-dextrose equivalent and simulated insulin resistance. This type of case is not infrequently diagnosed by the ophthalmologist because of cataract or retinal hemorrhage.

By association with various men I have learned the following diagnostic axioms:

1. Carbuncle should be regarded as diabetic until proven otherwise.
2. Extensive furunculosis should have a fasting blood sugar or repeated Benedict's tests of the urine.
3. Generalized or genital pruritus should be regarded as diabetic until proven otherwise.
4. Loss of visual acuity may mean diabetes.
5. Frequency of urination does not always mean cystitis.
6. Neuritis is not uncommon in diabetics.
7. Gangrene may mean glycosuria.
8. Intractable eczema should suggest urinalysis.

When confronted with any of these conditions examination of a portion of a twenty-four hour urine specimen should be routine.

TREATMENT

Many mild cases might be managed by simple restriction of carbohydrates and instructions as to general hygiene, cleaning up foci of infection, etc., but I would like to reiterate that to even the mild diabetic, knowledge of his condition may mean the saving or at least the prolongation of his life. Then, too, the case with a high renal threshold for sugar, a very severe type, may become sugar free on such simple treatment but his blood sugar may remain over two hundred mgms. He is therefore constantly subject to coma or gangrene.

For these reasons I feel that all cases of diabetes should be worked out in detail and furnished with a prescribed, calculated diet plus insulin if necessary to maintain a normal blood sugar and body weight. The physician should hospitalize the case if at all possible and order bed rest and a basal maintenance diet. In estimating the diet it is necessary first to calculate the approximate total caloric requirements by multiplying the patient's normal weight for age and height in kilograms by twenty-six calories. (In children of course the calories per kilogram is much higher.) Using Woodyatt's formulas the total "G" is determined approximately by dividing the above product by seventeen. Protein in adults ranges from two-thirds to one

gram per kilogram of body weight. In children it may run as high as three grams per kilogram. Carbohydrates may now be determined by substituting in the formula $8G/10 - P/2$. Fat is equal to $2C$ plus $P/2$.

The result is a balanced diet in which the ratio of G to fatty acid is as 1 : 1.5. This aids in the prevention of ketosis and coma. The patient is kept on this diet until the urine is sugar free or until the doctor feels that he needs the insulin crutch. Then as soon as possible the calories per kilo are increased to thirty-five or forty to care for the patient's daily working needs. While in the hospital the patient should be taught to test his urine and the use of insulin if needed. He should also be taught to weigh his foods. Then on leaving the hospital he can buy a scale calibrated in grams and with the help of a chart showing the percentage of sugar in various food stuffs, measure out his diet at home. Some men claim all this is unnecessary, but I was trained to teach the patient.

COMA

Deaths are often due to treating profound insulin hypoglycemia with collapse as though it were diabetic coma. Of course in a mild case the patient can talk and the problem is relatively simple. On the other hand a profound case of each can hardly be differentiated superficially. The best and safest diagnostic approach is by urinalysis and blood sugar examination, the latter being the most reliable. If laboratory tests are not available we are told that in diabetic coma the eyeballs are soft and flabby. In severe insulin collapse Sehestedt claims that there is usually a unilateral or even bilateral Babinski reflex. With the help of these two signs and good luck we may make the proper therapeutic advance.

Insulin shock, as you know, is treated by sugar or orange juice by mouth and severe cases by intravenous glucose.

In regard to treating diabetic coma I will merely quote from a recent article by Joslin: (1) Apply warmth. (2) On admission twenty to fifty units of insulin are given on clinical evidence and tests of urine. The initial dose is repeated in thirty minutes and so on until clinical and chemical evidence show improvement. Usually

we feel that an unconscious case requires two hundred units in the first two hours. Urinalysis every one or two hours is routine. Using Benedict's solution, a red test requires fifteen units of insulin, a yellow ten, and green five. (3) One thousand to one thousand five hundred c.c. of normal salt solution are given subcutaneously plus five hundred to seven hundred fifty c.c. intravenously if needed. A child would require barely half this amount. If no vomiting is present fluids by mouth are allowable but should be restricted to sixty or one hundred c.c. per hour for fear of acute gastric dilatation. (4) Gastric lavage is of great value. (5) Circulatory stimulants are indicated particularly in adults. Ephedrine has been given intravenously and subcutaneously in doses up to one c.c. Adrenalin is used for extreme collapse.

(6) A cleansing enema is routinely given. (7) As conditions demand the patient may receive fifty to one hundred grams of glucose within twenty-four hours. Intravenous glucose is reserved for extreme collapse. Preferably the hyperglycemia of the circulating blood is utilized by means of insulin. Himsworth believes this opinion wrong and insists that the diabetic in acidosis needs "glucose covered by insulin and not insulin covered by glucose." To prevent coma teach your patient.

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The Thymus Syndrome in the Newborn*

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TULSA

Ever since the first clinical reference to the thymus in 1614 by Plater,¹ of a tumor of the thymus in an infant dying quite suddenly, much attention from time to time, and sporadically, has been given to the place of the thymus in the body's economy both in health and disease. This paper is not a critique upon the thymus, but is an effort to direct attention to a disease-condition of the thymus in the newborn and in infancy inasmuch as there appears to be a definite tendency to minimize, and in some quarters to utterly ignore, the apparent dysfunction of the gland at the present time. This paper will not touch upon the thymus as related to *status thymicolymphaticus* because it is a general systemic disease of childhood first described by Paultauf² and characterized anatomically by general hyperplasia of the lymphatic tissue and thymus, a small heart and narrow vessels. Such individuals have a low resistance and are likely to die sud-

denly from cardiac failure. It would appear that this theory of the cause of death must be altered, for Woldbott³ has recently shown the disease frequently is allergic with anaphylactic edema of the lungs and ensuing asphyxia as the cause of death. But in this paper I shall deal only with certain aspects of thymus disease in the newborn and infancy up to six months.

How frequent is the occurrence of thymus syndrome? The answer to this question depends upon the authority one quotes, and there is no final reply ready. The best recent study is that of Capper and Schless⁴ who, in a study of one thousand and seventy-four newborn found the thymus enlarged in three hundred twenty-two, or thirty per cent, and of this number fifteen, or 4.7 per cent, showed symptoms. Therefore, of one thousand seventy-four newborn, only fifteen, or 1.4 per cent presented the thymic syndrome. Hence, Capper and Schless conclude that "true hypertrophy of the thymus gland in the newborn causing tracheostenosis and the typi-

*Read before the Section on Obstetrics and Pediatrics, Annual Meeting of Oklahoma State Medical Association, Oklahoma City, May, 1935

TABLE I

Incidence of Enlarged Thymus in Newborn
With and Without Symptoms
(Capper and Schless)

Total Number Newborn Studied	Cases Showing Enlarged Thymus		Cases Showing Enlarged Thymus and Symptoms...		Percent of Total Showing Symptoms
	No.	Pct.	No.	Pct.	
1074	322	30%	15	4.7%	1.4%

cal chain of symptoms is much rarer than it is commonly believed to exist." In keeping with these findings one must conclude that thymus disease is not frequent. The general tendency among some investigators seems to be in this direction. Chevalier Jackson, in his classic and pioneer researches, reported unmistakable cases of tracheostenosis observed bronchoscopically due to pressure of the thymus upon the trachea with a consequent narrowing. In a recent communication, Jackson⁵ states that a partial review of his records shows one hundred twenty-seven cases out of two thousand one hundred eighty-two children with endoscopic findings of thymus compression, these having been brought to him for various causes, including foreign body suspected or known to be present, the diagnosis of enlarged thymus being made routinely, I infer. The incidence, then, in Jackson's cases is 5.8 per cent. These cases were in children of all ages and the figures should not be quoted for the newborn alone, the newborn number probably being quite small. Yet Finkelstein⁶ states he has never seen a case of thymic asthma with definite compression of the trachea. Friedleben,⁷ in 1858, as a result of experimental and clinical investigation, stated: "There isn't any thymic asthma!"

In order to call this matter to our attention again, I have taken seven consecutive cases in my practice, just as they may come in yours, all more than a year since first seen by me except one. This small group of cases presents, I believe, some of the important aspects of symptomology, of

diagnosis, of treatment, and of prognosis as to be of some practical clinical value in everyday practice. As shown in Table II, the ages when I first saw these cases varied from six hours to six months. The onset of symptoms was at birth in five, at four days in one, and at four weeks in one. The order of birth is quite well distributed and the sex distribution was six females to one male.

TABLE II

Social Facts in Seven Cases of Thymus Syndrome
(Graham)

Symptoms Began	Case Number	First Seen by me at	Order of Birth	Sex	
				M	F
Birth	5	6 hours	Second born		1
Birth	7	18 hours	Second born		1
Birth	2	4 days	Third born		1
4 Days	1	4 days	First born	1	
4 Weeks	3	4 wks.	First born		1
Birth	6	3 mos.	Third born		1
Birth	4	6 mos.	Second born		1
				1	6

The symptoms vary with each case and in each case they may vary from hour to hour or day to day. Table III presents the symptoms in order of frequency of occurrence in this series.

TABLE III

Symptoms in Seven Cases of Thymic Asthma
(Graham)

SYMPTOMS	No. of Cases Present in ..	Per Cent of Cases
Cyanosis, usually never continuous	7	100
Stridor	5	71
Suffocative attacks, ckoking, coughing...	5	71
Dyspnea: continuous, intermittent, or paroxysmal	5	71
Asphyxia	4	57
Dysphagia	4	57
Crowing or wheezing	4	57
Vomiting	2	28
Convulsions or spasms	1	14
Blue baby at birth	5	71
Poor gain or loss of weight	4	57
Mucus in vomitus or feces	3	43
Cervical retraction	3	43

In this small series of seven cases, as well as in all I have seen, cyanosis was the outstanding symptom as regards frequen-

cy. It was present in every case, but never continuous although nearly so in case one (Table IV) that died without x-ray diagnosis or treatment. The cyanosis may be of any degree varying from very mild to the most severe, even to the duskiness of asphyxia which may follow in its wake. And the cyanosis may quickly, almost instantly and dramatically, lead to immediate death.

Stridor was present in five, or seventy-one per cent, of the cases and crowing, or wheezing, in four, or fifty-seven per cent of the cases. While these signs may be, and usually are, present they quite frequently are found in other conditions or diseases and may confuse the diagnosis. One case of stridor, seen in early infancy eight years ago and in which the thymus was ruled out, did not lose this sign until five and one-half years of age.

The suffocative attacks were present in seventy-one per cent and usually were characterized by choking, coughing, and occasionally vomiting, which occurred in twenty-eight per cent. The suffocative attacks not infrequently were associated with dysphagia, present in fifty-seven per cent, which often was initiated by the ingestion of water only. Asphyxia, present in fifty-seven per cent, may follow the suffocative attacks.

Dyspnea, present in seventy-one per cent, is usually preceded by some degree of cyanosis. The dyspnea may be continuous in the severe cases although it may vary much in depth; it may be intermittent, fading insensibly from slight to marked; or it may be paroxysmal, assuming at times almost anginal proportions. Convulsions, or spasms, occasionally are present.

The symptoms mentioned above are those usually referred to by authors. In my series, and in these seven cases, I have found four other findings which seem to be present frequently. It will be noted that five of the seven cases, seventy-one per cent, were blue babies at birth. A rather large percentage of babies are blue at birth due to various causes. The thymus baby is usually among them. Congenital heart disease is present in my series of newborn in about 0.3 per cent, while the thymus was diagnosed in three per cent to

four per cent. If the newborn is a blue baby at birth, I think first of thymus disease.

The second additional symptom, present in fifty-seven per cent, was a poor gain in weight or an actual loss. The more severe the disease, the more pronounced is the loss of weight. And any gain in weight may be quite fickle.

The third additional symptom, present in forty-three per cent, was mucus in the vomitus and feces, especially the latter. Case six, from a nearby state, was being treated for mucous colitis but without avail. The symptoms of cyanosis, dyspnea, suffocation, asphyxia, and vomiting, and being a blue baby at birth to begin with, in the presence of some mucus in the vomitus and excessive amounts in the feces only served to indicate mucous colitis. Two x-ray treatments to the thymus, even though the thymus was practically normal in lateral dimensions, served to cure the mucous colitis as well as the other symptoms.

The fourth additional symptom, present in forty-three per cent, was cervical retraction. This sign was present in three of the seven cases, and in one case, a tentative diagnosis of meningitis had been made when I was called in consultation. This infant (case three) was not a blue baby, was a normal delivery, and was well for four weeks when symptoms first appeared. The cervical retraction is probably a compensatory effort to overcome the tracheostenosis which may be present.

Capper and Schless⁴ state that before a diagnosis of thymus syndrome can be made you must differentiate and exclude: "(1) Atelectasis; (2) cerebral hemorrhage; (3) congenital heart disease; (4) laryngeal anomalies or infections; (5) bronchitis or pneumonia; (6) hypertrophied mediastinal glands; (7) retropharyngeal, peritonsillar, or cervical abscess; (8) asthma; (9) laryngospasm or tetany of newborn; (10) congenital laryngeal stridor; (11) micrognathia; (12) large adenoids; (13) breath holding; (14) macroglossia; (15) tongue swallowing; (16) foreign body in pharynx or larynx." I should feel that if these sixteen conditions are excluded, the diagnosis of thymus disease will surely stand.

It is my clinical impression that the thymic syndrome is of rather frequent occurrence in the children I examine. I estimate it at about five per cent of those seen by me in the first year of life. I do not take x-ray pictures routinely of the newborn cases I see; only when symptoms supervene are radiographs made and sometimes, alas, not even then. Hence, at best my estimate of five per cent may be quite inaccurate; it is a clinical impression. Perhaps Capper and Schless' figure of 1.4 per cent is nearer being correct. Certainly theirs is a brilliant and worthwhile contribution. Table IV shows the incidence in this series.

TABLE IV

Percentage of Incidence of Cases of Thymic Syndrome and Allergic Symptoms (Graham)

Total number of cases examined.....	433
Number of cases six months or under examined	178
Number of cases six months or under with thymus symptoms	7
Percentage with symptoms (six months or under)	4%
Percentage of six months or under with allergic symptoms	12.8%

However, Searle⁸ believes the incidence to thymus disease in all ages of childhood to be considerably higher than is generally believed. While he gives no percentage, he believes, judging from his large clinical experience and special attention paid to this syndrome, that too little emphasis is placed upon thymus disease. Searle states: "The symptoms are variable. Evidence of the disorder may be present at birth or entirely lacking, only to appear at a later period. Whenever the symptoms do appear, they should be treated as an emergency. I believe the thymic syndrome of

much more frequent occurrence than is generally believed."

Friedlander⁹ states that "according to some clinicians enlargement of the thymus is supposed to be rather a rare condition. Those of us who have been particularly interested in the question have been able to prove the fallacy of this view. The condition is in reality quite common." Benjamin and Lange,¹⁰ in an out-patient clinic in one year out of two hundred twenty-five new cases, reported the discovery of thymus disturbance in nineteen cases, or 8.4 per cent.

The x-ray was the only treatment used in my cases. The number of treatments has ranged from one to six. Table V shows a correlation of the severity of symptoms, the x-ray findings, and the results both immediate and later, along with residual diseases or defects.

In case No. 1 the symptoms came on suddenly on the fourth day, in the evening. The infant was seen in consultation after midnight. The symptoms did not appear very severe. The decision was made to postpone action until morning. Death occurred three hours later.

In case No. 2 the symptoms were only slight to moderate and the radiographic findings showed a normal or only slightly enlarged thymus. One x-ray treatment gave excellent results. A second treatment was to be given in a week and the parents postponed it. At one month of age some slight cyanosis and slight dyspnea appeared Saturday evening and the parents decided to have another treatment on Monday. A severe suffocative attack followed by asphyxia occurred Sunday night with ensuing death.

TABLE V

Case No.	Degree of Symptoms	When Symptoms Began	Radiographic Findings	Results		Residual Diseases
				Immediate	Later	
1	+++	Fourth day	No x-ray	No x-ray. Death.	—	—
2	++	Birth: Blue baby	Slightly enlarged or normal +	Excellent. Only one treatment.	Death	—
3	++	Four weeks	Moderately enlarged +	Excellent. Two treatments.	Good	—
4	++	Birth: Blue baby	Moderately enlarged +	Excellent. One treatment.	Good	Cretin
5	++++	Birth: Blue baby	Not enlarged. Normal	Excellent. One treatment.	Good	—
6	++++	Birth: Blue baby	Slightly enlarged +	Good. Three treatments required.	Good	—
7	++++	Birth: Blue baby	Very much enlarged +	Fair. Six treatments required.	Good	Birth injury?

In case No. 4 the hypothyroidism was not the result of the x-ray therapy, but was present before treatment and was so diagnosed. Case No. 7 was a difficult delivery, mid-forceps being used. The symptoms were very severe and cerebral hemorrhage was feared along with the thymus syndrome. However, such marked improvement followed x-ray therapy for several days that I considered cerebral pathology less likely, especially since the radiographic shadow was very much enlarged. Some relapses of symptoms appeared which responded nicely to therapy, whereupon I diagnosed tentatively the condition as thymic asthma. The results were good. However, the child now fourteen months of age, has not progressed normally and I fear a diagnosis of at least low grade birth injury must be seriously considered.

It will be noted that the size of the gland as shown by the x-ray does not necessarily indicate the severity of symptoms. In case No. 7 four plus degree of symptoms is paralleled by four plus size thymus, while in case No. 5 four plus symptoms are present along with a normal sized thymus. In case No. 2 the symptoms were two plus and the thymus normal or one plus, and death resulted. There appears to be no definite relation between the size of the thymus and symptoms, if any.

SUMMARY

1. It is my opinion that thymus disease occurs rather frequently and that, while it is sometimes incorrectly diagnosed, its diagnosis when present is much more frequently missed. In the series of seven cases here reported as thymic syndrome of six months or younger, the incidence is four per cent.

2. It is my opinion that simple hyperplasia or lateral enlargement of the thymus gland should not be diagnosed as thymus disease on the basis of x-ray findings alone, but it should be carefully observed and certainly so diagnosed when symptoms appear. And, conversely, in the presence of thymic symptoms and absence of positive x-ray findings (case No. 5), I feel immediate and adequate x-ray therapy should never be denied any child.¹¹

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Rosacea Interpreted as Bacterid From Focal Infection

The recovery of a patient having rosacea, which condition cleared up promptly, after drainage of a maxillary empyema caused by an infected tooth prompted Hermann Feit, Elizabeth Ann Laszlo and Frank Vero, New York (*Journal A. M. A.*, November 30, 1935), to investigate the question of focal infection in rosacea in fifty patients. The majority of these patients had previously received the usual forms of treatment for rosacea without appreciable improvement, and the authors' efforts were concerned chiefly with the detection and removal of focal infections. The group studied had rosacea for an average of four years. The portion of females to males was four to one. The greatest number of cases belonged to the age group of thirty to forty years. The next largest number belonged to the group between twenty and thirty years. The infections most frequently found were dental (twenty-nine cases). The next largest number of focal infections was found in the paranasal sinuses, of which the maxillary was involved most frequently. The third most frequent type of infection was chronic tonsillitis. In addition, otitis media, cervical adenitis, chronic appendicitis and deep-seated cutaneous infections were considered as possible foci. Eighteen patients suffered from chronic constipation. Since these cases were tabulated a patient was observed with endometritis whose rosacea has cleared up following curettage. Removal of focal infections resulted in fourteen cures, thirteen greatly improved, twelve improved, and one unimproved; ten were not observed for a sufficient length of time. The results would have been better were it not for the refusal of some patients to undergo the various operations indicated, such as dental extraction and tonsillectomy. In some elderly patients the advisability of such an operation seemed questionable.

Heart Reserve

It is wise to use all precautions to safeguard the body during the advancing years so that one's bodily health as well as the youthful spirit may be maintained as long as possible. Dr. Frank T. Fulton continues his discussion on "Budgeting the Reserve Strength of the Heart" in the January Hygeia.

If by chance one suffers the serious accident of having one of the coronary arteries blocked by a clot, thus cutting off temporarily the circulation of a portion of the heart muscle, the situation is difficult. The reserve strength may be at the zero point. Absolute rest in bed for a long time is imperative.

URETHRAL STRICTURE*

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The management of urethral stricture oftentimes spells the fate of the patient, as a stricture of the urethra may lead to any of the sequelae of urinary obstruction. An obstruction to urination is often followed by a compensatory hypertrophy of the trigone and as hypertrophy of the trigone is sometimes a cause of obstruction, it is important to remember that the trigone, as shown by Young,¹ is a continuation of the longitudinal muscle fibers of the urethra superimposed upon the muscle of the bladder wall.

It is significant that the nerve supply of the urethra, the muscle layers and the cutaneous surface all come from the same cord of the sacral plexus, of the pudic nerve, which divides into the perineal and dorsal. Let us decide what conditions shall be considered in a stricture of the urethra. A stricture has been defined as the abnormal narrowing of a canal, duct, or passage either from cicatricial contraction or deposit of abnormal tissue.² Organic stricture of the urethra is the result of inflammatory action causing an effusion of lymph into the submucous cellular tissue and of the lining membrane. We may consider this as a soft infiltration. In old cases and repeated attacks of acute exacerbations, the tissue becomes inelastic and firm, almost of the consistency of fibrocartilage. This may be considered a hard infiltration.

Besides the organic stricture there is also a spasmodic stricture,³ which most frequently causes acute retention, due to a spasm of the urethra. This condition is noted in post-operative cases and occasionally results from hernia, vericocoele, and probably other adjacent irritations.

As the prostatic urethra and the external sphincter receive fibers from the pudic nerves which supply the urethra and the

surrounding muscular apparatus,⁴ it is not difficult to understand why the irritation from any lesion in the urethra should result in an acute spasm of the same.

The importance of a correct diagnosis and proper treatment will be more forcibly impressed if mention is made of the ultimate injurious possibilities. These effects may be placed under three headings:

1. Local—Those confined to the genito-urinary tract.
2. Systemic.
3. Nervous reflexes.

The effects under one and two run parallel with urinary retention, or urinary stasis caused by strictures long standing and small calibre, while nervous reflexes frequently result from stricture of large size.

Under local effects are found sacculations posterior to the stricture, oftentimes an abscess, and tissue infiltration. Engorgement of the verumontanum, trigonitis, and trabeculations of the bladder, giving rise to sacculations and diverticula which invite residual urine, thus resulting in cystitis and deposits which may form vesicle calculi.

Under systemic effects is toxemia, the result of absorption from residual urine. It has been demonstrated that stricture anywhere in the genito-urinary tract can be a cause *per se* of high blood pressure and increased cardiac burden, while the entire chain of symptoms due to uremia may result from urethral stricture.

Nervous reflexes may be manifested by severe occipital headaches, eye and ear disturbances, neuralgia of cord and testes; profound mental depression, gastro-intestinal upset, hypochondria and impotence.

Diagnosis: In approaching a correct interpretation of existing symptoms, several principles must be kept in mind:

1. The size of the meatus.

*Read before the Urological Section, Annual Meeting, Oklahoma State Medical Association, Oklahoma City, May, 1935.

It has been pointed out many times that a contracted or pinhole meatus may be the chief cause of urinary obstruction and may lead to any one or all of the effects mentioned above. Therefore, do a meatotomy at once, cut to a size larger than the urethra to allow for some contraction on healing.⁵

As the slightest obstruction in the urethra is able to produce the gravest symptoms, both local and general, and if the balance between the natural expulsive force of the bladder and friction of the stream along the urethra is disturbed, the bladder may be irritated and the kidney function depressed.

With a persistent gleet following a case of urethritis, especially if there is difficulty in urinating, dribbling of urine, persistent shreds and possibly nervous reflexes, one may suspect stricture.⁶

Urine may possess an irritating quality from the predominance of an acid or alkali, the persistence of either keeping up irritation, and a urinalysis should be done preceding any form of instrumentation.

Also there are three principles in instrumentation we must not forget:

1. Anesthesia—Our choice is Nupercaine.
2. Lubrication.
3. Gentleness.

For filiform strictures, we prefer the woven one-piece Phillips catheter or bougie.

Brickner⁷ says: "Force is never helpful in overcoming the resistance of a stricture to instrumental passage; it is bound to do harm. A combination of patience, with a strong admixture of gentleness and judgment will effect the desired result in most cases."

The management of stricture depends upon the following factors:

1. Condition and age of the patient.
2. Size and location of the stricture.
3. Extravasation and infection.

In the event of an acute retention from a tight organic stricture, if toxemia and hypertension exist, especially in an elderly patient, it would be preferable to do a

suprapubic cystotomy and dilate the stricture later.

Size and location: A stricture of small size in the posterior urethra in which a filiform may be teased through may be left in place for the urine to dribble around. Generally in twenty-four hours there will be a relaxation so that a small gum catheter may be inserted and gradual dilatation begun with a gum bougie.

In event of infiltration and infection, a suprapubic cystotomy should be done at once, all areas of extravasation laid open and packed. The urine must be diverted from these areas. After a stricture has been dilated to size eighteen with woven bougies then metal sounds may be used for further treatment.

I would like to stress the following points:

1. Anesthesia, lubrication and gentleness.
2. In elderly patients with hypertension and toxemia complicated with a filiform stricture, we think the safest thing to do is a suprapubic cystotomy and dilate the stricture later.

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Should Heterophile Antibody be Used in Treatment of Pneumococcic Pneumonia?

In order to shed some light directly on the relationship of heterophile antibody to the course of lobar pneumonia in man, Maxwell Finland, Boston; James M. Ruegsegger, Durham, N. C., and Lloyd D. Felton, Baltimore (Journal A. M. A., October 12, 1935), studied the content of sheep cell hemolysin in the serums of 120 patients with pneumococcic pneumonia, including twenty-four who were treated with concentrated antibody from antipneumococcus horse serum. The serums of subjects immunized with potent pneumococcus antigenic fractions and of normal controls were tested for comparison. A total of 671 serums were examined. On the basis of their observations the authors conclude that heterophile antibody has no relationship to the course or outcome in human cases of pneumococcic pneumonia. Their data failed to show that pneumococci, when active in causing pneumonia in man, exhibit the characteristics of heterophile antigen.

Disappointing Results From Ionization Treatment for Hay Fever

Maximilian A. Ramirez, New York (Journal A. M. A., Jan. 25, 1936), used the ionization technic recommended by Warwick in fifty cases of true (seasonal) pollen cases, so-called hay fever, and twenty-five were cases of nonspecific perennial vasomotor rhinitis that did not give a positive skin reaction to allergens ordinarily used in testing. In the group of nonspecific perennial vasomotor rhinitis he believes that there was evidence of benefit and that the vast majority were improved. In the hay fever series (seasonal pollinosis) the treatment was a complete failure. Passive transfer tests performed with the serum of several of the hay fever patients showed no variation whatever following ionization treatment.

Diuretic Action of Potassium Salts

The biochemical studies of Norman M. Keith and Melvin W. Binger, Rochester, Minn. (Journal A. M. A., November 16, 1935), indicate that potassium is readily absorbed from the intestine, disappears quickly into the tissues, and can be rapidly excreted by the kidney. The small amount in the blood serum, even after ingestion of a considerable quantity, raises the question as to its manner of storage and subsequent liberation for excretion. The two chief storehouses of potassium are the erythrocytes of the blood stream and the cells of voluntary muscle. In health, any excess seems to be quickly removed from the blood serum and is then gradually excreted by the kidneys. Following depletion of potassium due to starvation and that seen in cardiac edema, there is retention with a refilling of the muscle storehouse. The efficiency with which the kidney concentrates potassium, at least fifty times, readily explains the rapid elimination of a great excess taken in the diet by eaters of potatoes, for example. The ability of the kidney to excrete potassium may be maintained late in chronic nephritis in a similar way to its ability to eliminate creatinine. The much greater concentration by the kidneys of potassium than sodium may possibly be explained by less reabsorption of the former in the renal tubules. The authors' results together with those of Miller again emphasize the well known fact that potassium and sodium have certain independent biologic functions, as, for instance, the high concentration of sodium in blood serum and interstitial fluid in contrast to the small content of potassium, the high concentration of potassium in the erythrocytes with little or no sodium present, and also the initial retention of water with the ingestion of sodium salts in contrast to loss of water after taking potassium salts. The present study shows that five potassium salts cause diuresis. The cation potassium is readily excreted in each instance by the kidney; it also brings about a definite shift of the acid-base equilibrium in the urine toward the alkaline side. These two facts offer a possible explanation for its diuretic action. Of the five salts the nitrate produced the most marked effect, which empha-

sizes the importance of the anion as well as the cation in considering the diuretic action of a given salt. The authors state that their clinical results with potassium salts confirm the results of the therapeutists of the last eighty years. They prefer potassium nitrate because, after its use, diuresis frequently occurs. In their experience it is less likely to cause toxic symptoms than ammonium nitrate. Its action, when combined with other diuretics, is also often satisfactory. Organic compounds of mercury act more rapidly but in so doing may injure tissue, such as those of a diseased kidney. Potassium salts, more particularly the bicarbonate, acetate and citrate, produce a rapid shift in the acid-base balance, rendering the plasma and urine more alkaline. This action suggests that these potassium salts may be more effective and less likely to cause edema in combatting acidosis than sodium salts. They might also be used when a strongly alkaline urine is desired.

What to Play With?

Toys are the realities of the child's world. They are to him what work and tools and recreation are to adults. To a large degree, appropriate toys for the various age levels depend on the individual child; the toy should be just a little more advanced than the child's present stage of development. Billie Teel Mettel concludes her discussion of "Toys and Games That Teach and Train" in the February Hygeia.

The preschool child should be given playthings of an order not so plentiful in school, that will give him contact with nature, instruct him in simple handiwork and exercise the large fundamental muscles. Imitative play becomes important at this time, and the laundry set, drawing paper and wooden garden tools are welcome and appropriate toy gifts.

Goggles Are Necessary Safeguard for the Eyes

In terms of workman's compensation, industrial eye hazards are more serious than any other group of accident hazards. It is estimated that the actual costs of eye injuries in industry amount to approximately fifty million dollars a year in this country. Rose Henderson discusses the many uses for goggles as a protection for the eyes in the February Hygeia.

Goggles save sight and money. Their protection means better work and more of it, since the men can go about their work without fear of flying splinters of steel or splashes of hot metals or chemicals.

Frequent examinations of the eyes of employees and the transfer of workmen whose vision is too much taxed by close work to less exacting jobs does much to prevent blindness and accidents involving other injuries. Safety education is of course the greatest aid in eliminating eye hazards in industry. Eternal vigilance is the price of greater safety on the part of every one connected with industrial occupations.

Report of Licenses Granted to Practice Medicine

The following were granted licenses during the month of January:

NAME	Year of Birth	Place of Birth	School of	Year of Graduation	ADDRESS
Seibold, Geo. Joseph, Jr.	4-28-1909	Olney, Illinois	Oklahoma University	1934	St. Louis, Missouri
Lindstrom, Wm. Carl	11-17-1910	Ada, Oklahoma	Oklahoma University	1934	Oklahoma City, Okla.

THE JOURNAL

OF THE

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DR. L. S. WILLOUR.....Editor-in-Chief
McAlester, Oklahoma

DR. T. H. McCARLEY.....Associate Editor
McAlester, Oklahoma

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Articles sent this Journal for publication and all those read at the annual meetings of the State Association are the sole property of this Journal. The Journal relies on each individual contributor's strict adherence to this well-known rule of medical journalism. In the event an article sent this Journal for publication is published before appearance in the Journal the manuscript will be returned to the writer.

Failure to receive The Journal should call for immediate notification of the editor, 203 Ainsworth Building, McAlester, Oklahoma.

Local news of possible interest to the medical profession, notes on removals, changes of addresses, births, deaths and weddings will be gratefully received.

Advertising of articles, drugs or compounds unapproved by the Council on Pharmacy of the A. M. A., will not be accepted.

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EDITORIAL

ANNUAL MEETING

The dates of the Annual Meeting, which is to be held at Enid, are April 6, 7, 8, and an excellent program is in the process of arrangement.

We have been fortunate in procuring as guest speakers some of the outstanding authorities of the nation and the Sectional Chairmen report interesting and instructive programs.

The early date is necessitated by the early date which has been set by the American Medical Association for their meeting in Kansas City and it has consequently been necessary for the Section Officers to speed up their work in pro-

curing their programs which they have satisfactorily done.

The Garfield County Medical Society has made every effort to make their arrangements satisfactory and complete and the members of the State Association can be assured of not only an excellent scientific program but extensive arrangements for their entertainment.

The hotel facilities in Enid are sufficient to accommodate a large convention and it has been arranged so that each of the leading hotels, the Youngblood and the Oxford, will have some of the Section work as well as some of the exhibits.

There will be a great deal of business to be transacted by the House of Delegates and it will be important that each Delegate be on hand for the opening session, Monday night, April 6th, in order that they may lend their counsel and advice in the solution of many important problems.

A complete program will be published in the March issue of THE JOURNAL and after you have perused it you will find that you cannot afford to miss this important meeting.

ANNUAL DUES

As the Council for the past two years has taken special action relative to the date of delinquency in the payment of dues, it is thought this year the same rule should apply. Dues will become delinquent and penalty attached after February 29th. All Secretaries will please take notice of this and see that this information is given members of their County Societies. All remittances must be in before the first of March, otherwise the penalty of \$2.00 per member, as fixed by the Constitution and By-Laws, is required.

"WHY AN AUXILIARY?"

The campaign now well under way to form auxiliaries to the county and state medical societies gives point to the question raised in the Wisconsin Medical Journal, "Why an Auxiliary?" We might as well ask "Why a Wife?" says the writer, who dips his pen in effervescent ink and gives us this:

Medical organizations went on for nearly a century in a state of single blessedness. Like an old bachelor it never seemed to realize that it was do-

ing many odd jobs which could be done by a help-mate and that its standing in the community was being sorely neglected. Then one spring morning some ten years ago came a comely lady, who announced herself as Mrs. Auxiliary, rolled up her sleeves, nudged Mr. Medicine in the side, and said, "Shove over—I'm going to pitch in, help get your house in order, and I'm going to be your partner."

The old fellow, unaccustomed to team work, grumbled and still sputters at times, but down in his heart realizes how efficient she has been. During the years she has grown and developed into a buxom housewife, on whom he has learned to depend more and more. She has been helpful in more ways than he realizes and she can do more and more for him as time goes on and he learns more to rely on her. Her main job is to improve his standing in the community. He has been a hermit and has covered up his sterling qualities and his good deeds. He has had a few contacts with others and she can do much in bringing about a better appreciation of his work and of his worth.—N. Y. State J. M., October 5, 1935, also Pennsylvania Medical Journal, December, 1935.

Editorial Notes—Personal and General

DR. FLOYD S. NEWMAN, Shattuck, will spend six weeks in New Orleans taking special work in eye, ear, nose and throat at Tulane University.

DR. L. S. WILLOUR, McAlester, spent two weeks in Memphis, doing special orthopedic work at the Willis C. Campbell Clinic.

DR. M. S. GREGORY, Oklahoma City, announces his removal from 2209 N. W. 22nd, to 1202 Medical Arts Building.

DR. GREGORY E. STANBRO, Oklahoma City, announces his removal from Twelfth and Harvey Streets, to 1111 Medical Arts Building.

DR. HENRY H. TURNER, Oklahoma City, recently addressed the North Texas Medical Association meeting in Dallas, on "The Pathogenesis and Treatment of Obesity." He was also guest speaker of the Sedgwick County Medical Society at Wichita, Kansas, January 7, where he spoke on "Recent Advances in Endocrinology."

DR. R. M. SHEPARD, Tulsa, addressed the Craig County Medical Society, January 7, on "Pulmonary Tuberculosis."

DR. E. L. BAGBY, Vinita, has been appointed Superintendent of the Northeastern Oklahoma Hospital at Enid.

DR. C. S. NEER, Vinita, who has been ill in an Oklahoma City hospital for some time is reported improving.

DR. CAROLINE BASSMAN, Claremore, is reported ill in a Tulsa hospital.

American College of Surgeons

The Southwestern sectional meeting of the American College of Surgeons will be held in Dallas, Texas, on Wednesday, Thursday and Friday, March 4, 5, 6, with headquarters at the Baker Hotel.

Arrangements have been made for operative clinics each morning in the Dallas hospitals and hospital conferences will be held Wednesday and Thursday mornings.

Some of the distinguished visitors from outside of the section are: Doctors Geo. Crile, Cleveland; Alfred Adson, Rochester; Philip H. Kreuscher, Chicago; Donald C. Balfour, Rochester; Edward Jackson, Denver; Alton Ochsner, New Orleans; Malcolm T. MacEachern, Chicago; and Mr. Robert Jolly, Houston.

The States included in this sectional meeting are Texas, Oklahoma, Arkansas, Louisiana, New Mexico, Arizona and the Republic of Mexico.

Invitation is extended not only to the Fellows of the College but to the medical profession at large.

A Post-Graduate Course

A post-graduate course in "Neuropsychiatry in General Practice" will be held at the Menninger Clinic, Topeka, Kansas, April 20-25, inclusive. The course given last year will be repeated with revisions. Lectures, case studies, and seminars included in the five and a half day course will be exclusively directed to the application of modern neuropsychiatric principles to the cases which the general practitioner frequently sees in this field.

The course will be given by the members of the staff of the Menninger Clinic, assisted by others to be announced later.

Primary Esophageal Carcinoma, With Especial Reference to Nonstenosing Variety: Clinico-Pathologic Study Based on One Hundred and Eight Necropsies

Robert W. Mathews and Truman G. Schnabel, Philadelphia (Journal A. M. A., November 16, 1935), state that during a period of approximately thirteen years 260,000 patients were admitted to the Philadelphia General Hospital. Of this number, 247 had carcinoma of the esophagus, less than 0.1 per cent. Of these 226 died in the hospital and the remainder after being discharged. One hundred and eight came to autopsy; of this number twenty-two, or 20.3 per cent, exhibited a nonstenosing variety of lesion, and in eighty-six the lesion was certainly obstructive. The results of the clinicopathologic study of these autopsies are presented. Patients with nonstenosing esophageal carcinoma presented weight loss, pains in the chest, vomiting, cough, hoarseness and weakness as outstanding symptoms. Dysphagia was distinguished by its relative infrequency, whereas in the stenosing group it was the dominant symptom. The sex, age and race incidence, the location of pain, the metastases, and the immediate causes of death were much alike in patients with stenosing and nonstenosing lesions. While clinically both the stenosing and the nonstenosing lesions were rapidly malignant, the clinical courses in the nonstenosing group was only one third as long as that of the stenosing. Pathologically, these tumors were not particularly malignant, and there was no correlation between the grade of the tumor, the clinical course and the stenosing or nonstenosing tendencies. Whether roentgen investigation is positive or negative for this disease, the patient should be studied subsequently by esophagoscopy, and, at the same time, properly selected tissue should be procured for histologic study. A single or even a subsequent report of failure to find a tumor, however, should not be considered as finally precluding a diagnosis of carcinoma.

February Radio Programs by the American Medical Association

February 18: Heart Disease—Speaker, Dr. Morris Fishbein. Is it really increasing; what causes it; how to prevent it and how to live with it.

February 25: Crippled Children—Speaker, Dr. W. W. Bauer. Injuries and diseases which cause crippling and what medicine, surgery and physical therapy can do for crippled children.

These programs are heard each Tuesday afternoon at five o'clock eastern standard time on a coast-to-coast network of the National Broadcasting Company and on short waves.

Natural Conception Control

In discussing the factors governing the periodicity in the fertility and sterility of women, Leo J. Latz, with the technical assistance of E. Reiner, Chicago (Journal A. M. A., October 19, 1935), states that the life of the sperm cell within the female genitalia is less than forty-eight hours. The most important factor influencing the length of the fertility of the spermatozoa in a harmful way is the body temperature within the vagina. The ovum can be fertilized for only a few hours after ovulation. Ovulation occurs on the fifteenth day before the beginning of the next menstruation, according to Knaus, and between the twelfth and the sixteenth day before the commencement of the next menstruation, according to Ogino. The fertile period in cycles of from twenty-one to thirty-eight days is depicted graphically according to Knaus and its modification as advised by the author. For practical reasons in applying the method, when instructing women in its use he has added an additional day before and two days after the fertile period to allow for possible errors in computation. This gives eight days of abstinence, which he advises in regularly menstruating women. He gives rules to be followed in the use of the safe period, states that the Ogino-Knaus method is correct and practical and that at least eighty per cent of all women menstruate regularly enough to make use of natural conception control.

Tooth Extraction Is No Longer Terrifying

Contrary to the usual belief, tooth removal is a gentle art. It has no place for strong-arm methods. Thus Dr. David W. McLean reassures the layman in chapter XIV of "These Teeth of Mine" in the February Hygeia. The secret, of course, is effective anesthesia, which removes all necessity to get an extraction over quickly.

Certain kinds of teeth should be removed as soon as possible. The hopelessly fractured tooth, with pulp uncovered, is one candidate for prompt removal.

Present-day operations on teeth will never rank as indoor sports, but there is nothing about them to inspire terror.

The True Economy of Dextri-Maltose

It is interesting to note that a fair average of the length of time an infant receives Dextri-Maltose is five months; that these five months are the most critical of the baby's life; that the difference in cost to the mother between Dextri-Maltose and the very cheapest carbohydrate, at most is only \$6 for this entire period—a few cents a day; that, in the end, it costs the mother less to employ regular medical attendance for the baby than to attempt to do her own feeding, which in numerous cases leads to a seriously sick baby eventually requiring the most costly medical attendance.

OBITUARIES

DOCTOR WILLIAM JAMES RISEN

Dr. W. J. Risen, Hooker, 72-year-old Texas County physician, died January 18th following a short illness.

Dr. Risen was born in Kentucky, January 24, 1864. He was a graduate of the Louisville College of Medicine in 1892. He located in Hooker in 1906, where he remained and practiced medicine until the time of his death. He was a member of the First Baptist Church of Hooker, a charter member and first Master of Hooker Lodge No. 366, A. F. & A. M., a member of the Knights Templar, at Liberal, and India Shrine at Oklahoma City. He was county superintendent of health at the time of his death.

He is survived by his wife and two sons.

DOCTOR ARLEY ERNEST CARLOCK

Dr. A. E. Carlock, pioneer physician of Hartshorne, died January 10th following a long illness.

He was born in Everton, Mo., January 21, 1873. He came to Indian Territory more than thirty-five years ago, beginning his practice of medicine in the mining region at Dow, before locating at Hartshorne.

Dr. Carlock is survived by his wife, a daughter and son and five brothers.

Interment was in Oak Hill Cemetery, McAlester.

DOCTOR THOMAS JEFFERSON DODSON

Dr. T. J. Dodson, former Norman physician, died suddenly January 11th while preparing for an emergency operation, in a Clinton hospital, from a heart condition.

Dr. Dodson was a native of Texas, receiving his education at Centenary College at Lampasas, Texas, and a medical school in Atlanta, Ga. He first practiced medicine at Sonora, Texas, coming to Mangum in 1900. He remained there until 1916 when he located in Ficher. From there he moved to Foss, Oklahoma, where he has been for the past three years.

He is survived by his wife and three daughters.

DOCTOR MILLINGTON SMITH

Dr. Millington Smith, 75-year-old pioneer Oklahoma City physician, died January 5th, following several months illness. He is survived by his wife, a daughter and son, two brothers and four sisters.

Dr. Smith was born near Arkadelphia, Ark., in 1860, and was educated at Washington University, St. Louis, Mo. His early practice in medicine was at Sulphur Springs, Texas. He came to Oklahoma City in 1906 and had been very active in medical work until the time of his illness.

He was a member of his County and State Medical organizations, the American Medical Association, American College of Surgeons, a Mason, and was Medical Director for the Mid-Continent Life Insurance Company.

Burial was in Rose Hill Cemetery, Oklahoma City.

ABSTRACTS : REVIEWS : COMMENTS and CORRESPONDENCE

DERMATOLOGY, RADIUM AND X-RAY THERAPY

Edited by William E. Eastland, M.D.
LAIN-ROLAND-EASTLAND CLINIC
705 Medical Arts Building, Oklahoma City

The Value of the Protein Skin Tests in Infantile Eczema. Lewis Webb Hill, M.D., Boston. *Journal American Medical Association*, Vol. 102, No. 12, March 24, 1934.

In this article the author reviews the question of protein sensitization as revealed by three different methods of skin testing; namely, the cutaneous, the intracutaneous and the method of passive transfer. The cutaneous method is the simplest one and is less likely to give false positive reaction than the intracutaneous test. The latter is more delicate but is more prone to give false positive reactions.

The method of passive transfer, in which a small amount of blood serum is withdrawn from the individual to be tested and is injected into a normal person and then the allergen applied, is looked upon as being accurate and of special value in exhaustive work in this line. It is really impractical in ordinary work. The author describes a scarifier which simplifies the technic of making cutaneous tests.

It is interesting to know that of the various substances most likely involved in producing skin reactions, the egg is one of greatest incidence. Although in cases in which there has been no ingestion of egg the sensitivity may exist, leading Hill to believe that it is a matter of heredity. This sensitivity is gradually overcome as the child becomes older.

Sensitization to milk does not have nearly as high an incidence in infants as that of egg. One statement in this article is of particular interest in which it is said that practically all infants who are sensitive to milk and to egg can be cured by using a milk-free diet, whereas, in those who are sensitive to egg alone and when not eating a diet including eggs it is not possible to withdraw anything from the diet, and they do not do so well. Also, it was observed that occasionally infants who do not give positive skin tests to milk may be cured by the removal of milk from the diet.

Desensitization has been tried by many methods, but has not proved successful. Avoidance of the offending food has given best results. Where multiple foods are involved it is much more difficult to obtain results on account of the inability to limit the child to a very few articles. The author feels that skin testing is of definite value in helping to obtain information that leads the way to proper dieting.

"What Treatment in Early Syphilis Accomplishes: I. Relapse and Curative Results. II. Optimum Treatment. III. Comparison of Bruusgaard's Work and the Three- to Twenty-Year Results of the Cooperative Clinical Group. J. H. Stokes, L. J. Usilton, H. N. Cole, J. E. Moore, P. A. O'Leary, U. J. Wile, T. Parran, Jr., and J. McMullen. Am. J. M. Sc. 188:660, November, 1934.

"The authors consider the frequency and type of all forms of relapse in early stages of syphilis. The total incidence was found to be 10.1 per cent for all patients treated for any period of time, the maximum being 19.7 per cent for patients treated six months or longer.

"The highest incidence of relapse was found to occur in patients with the mucocutaneous type of the disease who received treatment in the primary stage when the serologic reaction was positive. The explanation offered is that at that stage the immunizing or protective effect of a general secondary reaction is lacking.

"It may be to the advantage of this type of patient to allow the condition to progress to secondary syphilis if continuous treatment is available, provided due regard for infectiousness is considered. Otherwise a patient with primary syphilis who shows a positive reaction must be doubly vigilant regarding treatment and relapse.

"In this study the terms 'satisfactory results' or 'cure' indicate a long series of negative tests of the blood, often a negative test of the spinal fluid, no recent clinical or serologic evidence of relapse and normal results of physical examination.

"Without regard to the amount or method of treatment satisfactory results were obtained in 52.7 per cent of cases observed for two years or longer.

"In cases of primary syphilis with a negative serologic reaction the cures amounted to 86.4 per cent after continuous treatment; the figure, however, dropped to 64.3 per cent if the reaction of the blood had become positive in the primary stage of the disease. In patients with primary syphilis and a negative serologic reaction even irregular treatment gave satisfactory results in 54.7 per cent of instances.

"When secondary syphilis had developed the continuous method of treatment carried on for two years and over resulted in satisfactory results in 81.5 per cent of the cases.

"A theoretical discussion is given regarding the reasons why certain forms of continuous treatment give better results in certain stages of the infection, according to the function of resistance and the interval between courses of treatment.

"In a consideration of the optimum treatment it was found that the greatest percentage of satisfactory results followed a course of from ten to nineteen injections of arsphenamine with the accompanying amount of preparations of heavy metals administered in the primary stage of the disease when the serologic reaction was negative. When the serologic reaction had become positive,

from twenty-five to thirty-five injections of arsphenamine were required, and in early cases of secondary syphilis (first year) from twenty to twenty-nine injections were needed. The percentage of satisfactory results was 85, 65, and 58 per cent, respectively, the poorer results obtained in some cases being due to the intrinsic resistance of the disease.

"It is believed that low dosage of arsphenamine is less valuable than the higher dosage, the incidence of neurosyphilitic relapse being higher with low dosage and intermittent treatment, while proper treatment with arsphenamine did not predispose to neurosyphilis. 'Low dosage' refers to from 0.2 to 0.45 gm. for males and from 0.2 to 0.3 gm. for females.

"Regardless of the system used preparations of heavy metal with at least twenty injections of arsphenamine should be used during the first two years of the disease. If satisfactory results are not obtained more arsphenamine should be given.

"If during a two-year period of treatment the patient has progressed steadily to results which are satisfactory clinically and serologically, cessation of treatment is justified.

"A comparison is made of 907 cases in which treatment was administered (cooperative clinical series) with 145 cases of untreated syphilis (Bruusgaard series) observed for from three to ten and ten to twenty years.

"In the untreated patients the incidence of neurosyphilis was from two to four times greater, and that of cutaneous and osseous lesions, from seventeen to twenty-six times greater, than in patients who had received treatment.

"Likewise, from seventy-seven per cent to sixty-three per cent of the patients who had received treatment but only from twenty-four per cent to thirty-six per cent of those in the untreated series were free from symptoms and showed a negative Wassermann reaction. A small percentage (from 1.2 to 1.5 per cent) of treated patients whose serologic reaction was negative had abnormal reactions of the spinal fluid after from three to twenty years.

"in the untreated series sixty-one per cent were found to be free from symptoms after from three to ten years, while ninety-six per cent of those who had received adequate treatment were free from symptoms. In the group observed from ten to twenty years the same treatment resulted in freedom from symptoms in seventy-four per cent of the cases. For untreated patients, the figure was fifty per cent.

"Irregular treatment was the chief cause of complications.

"Bruusgaard found no evidence of cardiovascular syphilis in untreated patients in the group observed from three to ten years, but in the groups observed for longer periods he found that the incidence was 1.5 per cent in the ten to twenty-year group and ten per cent in the twenty to thirty-year group.

"For the cooperative clinical series of treated patients the incidence of cardiovascular syphilis was as follows: Definite symptoms appeared in 0.7 per cent and suggestive symptoms in 1.3 per cent of the cases in the three to ten-year group. In the ten to twenty-year group definite symptoms were found in 5.8 per cent and suggestive symptoms in 4.6 per cent.

"The members of this clinical group feel that the results obtained fully justify adequate and systematic modern treatment for early syphilis."

(Taken from the Archives of Dermatology and Syphilology, Vol. XXXII, No. 1, July, 1935, 109-110.)

ORTHOPAEDIC SURGERY

Edited by Earl D. McBride, M.D.
717 North Robinson Street, Oklahoma City

A Case of Giant-Cell Tumor of the Sacrum Which Invaded the Inferior Vena Cava. Albert C. Freeman, Kenneth K. Kinney, and Maurice R. Moore. *American Journal Cancer*, XXIV, 345, June, 1935.

The authors report a very interesting giant-cell tumor, primarily involving the sacrum, which invaded or destroyed by pressure both ilia and the two lower lumbar vertebrae. At autopsy the inferior vena cava was found filled with a thrombus of tumor tissue in continuity with the primary tumor. There were no true metastases. In their discussion the authors note that the sacrum is a very rare location for a giant-cell tumor. In their opinion there was ground for assuming that trauma was of etiological significance. The report is illustrated with photomicrograph, roentgenogram, and a photograph.

Untersuchungen Über Kyphosis Adolescentium (Investigations on Juvenile Kyphosis). Bruns' Beitr. z. klin. Chir., CLX, 13, 1934.

In this article the author reviews the different etiological considerations in juvenile kyphosis up to Schmorl's explanation. He then follows Schmorl and considers the presence of herniations of the substance of the intervertebral disc as a more important symptom than the occurrence of kyphosis. In a number of cases with the typical clinical picture, deformity of the spine was absent, but Schmorl's nodules could be demonstrated in the roentgenograms. These herniations may be associated with pain, so that pain is, as a rule, the earlier symptom. The symptom of deformity seems to be overestimated. In forty-five per cent of twenty-nine cases, the deformity was not noticed by the patients or relatives; in twenty-one per cent, other persons called the patient's attention to the deformity; and even on clinical examination spinal deformity was absent in twenty-one per cent of the cases. The author suggests, therefore, the term "cartilaginous body disease" because he sees in the herniation of the intervertebral disc the etiological factor of the disease.

Concerning the Evaluation of Late Results of the Surgical and Conservative Treatment of Tuberculous Spondylitis in Children. L. P. Marianchik. *Soviet Surg.* II, 79, 1935.

The author bases his conclusions on observations made upon one hundred seventy patients. The ages of the patients varied between four and fifteen years.

Nine patients were operated on, the Albee bone-graft operation and its modification being used. Three of these patients died. The post-mortem examination in two cases revealed progressive tuberculous destruction of the vertebrae, although the bone grafts produced excellent fusion of the spine.

One hundred and sixty-one patients were treated conservatively and there were two deaths.

A comparison of the two groups, as to the character of complications, mortality, general condition of health, and amount of activity permits the following conclusions: The Albee operation with its modifications, although immediately satisfactory, produces later exacerbations of the tuberculous process and, therefore, should not be performed on children. The conservative method, consisting of

the early and persistent use of all known climatological and orthopaedic measures, is preferable to the Albee operation in children.

Transformation en Chondro-Sarcome D'une Maladie Osteogenique (Transformation of an Osteogenic Tumor into Chondrosarcoma). Robert-Didier. Presse Med. XLIII, 915, June 8, 1935.

A woman, thirty-one years old, was operated upon in July, 1933, for a large exostosis of the anterior thoracic wall of three months' duration. This mass was removed and the pathological examination showed chondro-osteosarcoma. In October, the tumor had recurred and, at subsequent operation, two-thirds of the lower half of the sternum and from ten to twelve centimeters of the lower ribs were resected en masse. In April, 1934, another recurrence was noted. A third operation was performed and since then the patient has remained well.

Because of the possibility that even an apparently benign exostosis may assume malignant characteristics, the authors advise early and complete excision of all osteochondromata.

SURGERY AND GYNECOLOGY

Abstracts, Reviews and Comments from
LeRoy Long Clinic
714 Medical Arts Building, Oklahoma City

Cholecystendesis or Cholecystotomy, Apropos of Nine Personal Cases (La Cholecystendese ou Cholecystotomie, A' Propos de 9 Cas Personnels). By Pierre Smith and Gustave Roy, Hopital Saint-Luc, Montreal. L'Union Medicale du Canada, January, 1936.

The burden of this article is an argument in favor of less radical procedures in disease of the gall bladder and particularly a recommendation of an operation which has been named cholecystendesis (cholecystendese), in selected cases. It is preceded by this quotation from Einhorn in 1926: "In calculosis of the gallbladder, do only what is strictly necessary and nothing else; hold preferably to conservative practices."

Having observed, with many other surgeons, the persistence of rebellious post-operative hepatic pain, transient or prolonged icterus, and digestive difficulties, following cholecystectomy, the authors began, on June 15, 1934, to do the operation of cholecystendesis (cholecystendese), which had been brought to their attention in an article by Benedetto Schiassi of Bologna, in the *Journal de Chirurgie*, January, 1934. Since that time, they have been able to do a cholecystendesis in nine out of eighteen operations for disease of the bile tract area. As a result of this rather brief experience, they recommend the operation because of its simplicity, immediate safety and the well being after the operation.

The technique of the operation is as follows: The gallbladder is isolated, opened, emptied of its contents: bile debris and calculi. It is closed by suture, and replaced free in the abdominal cavity. This is a general sketch of the procedure, but certain particular things must be done, to wit:

1. The gallbladder region is perfectly protected (obviously, by compresses, etc.)

2. Two small silk sutures are placed through the serosa some little distance apart. These sutures are for lifting up and making tense a small area. They are to be used as handles (anses).

3. The gallbladder is punctured by a needle of

pretty large caliber between the sutures, holding the area between them on the stretch, and the intra-vesicular bile is aspirated.

4. With the point of puncture as the center, an incision two or three centimeters in length, following the axis of gallbladder, is made through the wall with a bistoury.

5. The sutures are replaced by a small holding forceps applied to each lip of incision.

6. Calculi are extracted by forceps or dull curette.

7. The cavity of gallbladder is explored by index finger in order to determine condition of intra-vesicular cavity and especially if calculi have been overlooked.

8. The cavity of gallbladder is cleansed by introducing small strips of gauze, soaked in distilled water after which multiple strips of gauze, soaked in ether, are employed, one after another.

9. After cleansing, the incision is closed in the following way:

- (a) Through and through suture of small catgut, followed by cleansing the suture line with distilled water, then by ether.

- (b) The first suture line is covered by sero-serous Lembert suture of fine silk.

- (c) A second line Lembert sero-serous of small silk may be advisable, but is optional ("facultative"). Final cleansing of suture line with distilled water, followed by ether.

The abdominal wound is closed in layers (fermeture etagee), with or without drainage, according to circumstances. When there is any doubt drainage is employed.

The operation of cholecystendesis, as sketched, has been followed by satisfactory results in each of the nine cases in which the authors have done it, and they believe that it is applicable where the gallbladder walls present a normal aspect with bluish slate color; where there is little or no thickening of the walls; where the serosa is smooth and mobile upon the subjacent tissue; where infection and tumefaction of mucosa in only probable, but without ulceration. The ideal case is that where one finds a single calculus, or a few calculi of moderate size, easily exterpable.

It is perfectly clear that the authors do not advise the operation of cholecystendesis outside of a limited pathological field. After remarking that the contra-indications of cholecystendesis will become indications for either cholecystotomy or cholecystectomy, they briefly consider the pathological states in which they believe that one or the other of these operations should be done:

1. Cholecystotomy is a proper procedure when there is infection of the biliary tract, when there is angiocholitis, when there are calculi in the choledochus. Biliary mud, black bile, lymphangitis or adenitis in anatomical relation with the choledochus are indications for cholecystotomy. Likewise, when there is a big liver, or evidences of pancreatic disease; when the patient is "hepatic" or the disease "humoral"; when the general state is precarious; when the gallbladder walls are moderately thickened, the serosa pale but smooth and glossy; when there is evidently infection, with modifications and ulcerations of the mucosa. Here cholecystotomy with a Pezzer drain and fixation of gallbladder to peritoneum or muscle is advised.

2. Cholecystectomy is advised when the capacity and the walls of the gallbladder are gravely altered to the extent that its functions as a retractile

reservoir, and as an organ for concentration of bile, are suppressed.

This interference with function is found in hydrops with mucous and "white bile"; in sclero-atrophic cholecystitis and in the degenerated gallbladder. This interference with function is found, too, in infected gallbladders, with phlegmon, gangrene, perforation, but here the authors advise cholecystectomy only "when the patient is in good general condition" ("lorsque le malade presente un bon etat general"). LeRoy Long.

Surgery of the Gallbladder and Biliary Tract. By Frank Glenn. *Annals of Surgery*, January, 1936, Page 77.

Three hundred and sixty cases of non-malignant diseases of the gallbladder and biliary tract are reported in which operation was followed by a mortality of 3.3 per cent. The mortality for cholecystectomy alone was 1.9 per cent. When combined with exploration and drainage of the common duct, cholecystectomy or cholecystostomy was attended by a mortality of nine per cent. Secondary plastic operations, fortunately rarely necessary, led to a very high mortality (forty per cent).

Indications and methods for exploration of the common duct. The author does not believe with Lahey that the ducts should be opened and searched for stones whenever the gallbladder is found thickened or contracted. He does not believe that the common duct should be explored routinely because it is a formidable procedure, adding definitely to the post-operative burden and sometimes to the mortality rate. He enumerates his criteria for exploration of the common duct as follows: (a) In which there are stones palpable in the duct; (b) in which there has been a history of progressive jaundice or repeated attacks of jaundice; (c) in which the common duct is dilated; (d) in which the head of the pancreas is indurated.

Induration of the head of the pancreas is often associated with obstruction due to stones in the ampulla of Vater and should be considered an indication for, rather than against, exploration. He thinks that the indurated common duct found in acute and sub-acute inflammatory processes of the gallbladder and which is associated with only a mild degree of jaundice should not be molested, for it seldom contains stones. If the duct is distended, as well as indurated, the situation is altered. Patients with cholecystitis and cholelithiasis, giving histories of repeated attacks of jaundice, should be explored with particular care not to overlook stones; it is in these cases that exploration has revealed stones in the hepatic duct.

In their cases autopsy of the twelve death cases showed two instances in which stones in the common duct had been overlooked at operation. The author comments that unfortunately, this is not an uncommon experience in surgery of the common duct and any method which tends to eliminate it should be employed. They have used the Cameron light in exploration of the common duct. The light is introduced and passed downward through the common duct toward the duodenum. If an obstruction is present its position can be determined, and, because of the difference in density of stones and the duct, the stones will be clearly outlined, enabling one to determine the nature of their surface. They have found the light of value in demonstrating the presence of a stone in the region of the ampulla of Vater. If stones are in this region they will be outlined against the less dense walls. They think that the light is of distinct value in this location because it is here that stones are most easily overlooked because it is pos-

sible to introduce a catheter past the stone into the duodenum and to irrigate around the stone without noting any obstruction. After exploration of the duct their method of drainage of the duct is to introduce a catheter through the cystic duct into the common duct and to then completely sew up the incision in the wall of the common duct.

Acute cholecystitis. There is a widely accepted opinion that the welfare of a patient with acute cholecystitis, on the whole, is best conserved by waiting for the acute process to subside and to then operate, if operation is contemplated, after the disappearance of the acute symptoms. The reasons given for these procedures are first, that the acutely inflamed viscus generally takes care of itself and that, therefore, complications due to gangrene and perforation do not occur; and second, that there is greater danger to the patient to undergo an operation during the acute stage of the inflammatory process than during an interval or chronic stage. The author thinks that the majority of cases of acute cholecystitis do subside; however, those that do not subside contribute in large measure to the high mortality in the surgical treatment of this disease. Their experience has not borne out the statement that there is increased danger to the patient from an operation during the acute stage of the disease. They say that they have operated on eighty cases of acute cholecystitis treated in the early stages and that there were four deaths, which makes a mortality of five per cent. They even believe that the acutely inflamed gallbladder is removed more easily than the chronically inflamed gallbladder, and that the post-operative course is no more stormy.

The danger of gangrene and perforation of the gallbladder in acute cholecystitis is stressed. There were twelve instances of perforation in eighty of their acute cases. They quote several authors and come to the conclusion that it is probably fair to state that between fifteen and twenty per cent of all cases of acute cholecystitis show evidence of perforation. These are the cases which develop the associated conditions of abdominal abscess, liver abscess and peritonitis, which raise the mortality in gallbladder and biliary tract surgery.

An analysis of the deaths in this series of cases showed that the chief causes of mortality in gallbladder and biliary tract surgery are an impaired cardiorenal system, jaundice and a damaged liver.

LeRoy D. Long.

Rupture of the Graafian Follicle and Corpus Luteum. *Surgery, Gynecology and Obstetrics*, January, 1936. By W. Fenn Hoyt, M.D., and Joe Vincent Meigs, M.D., Boston, Mass.

This article is based upon fifty-eight patients who had had hemorrhage from rupture of the graafian follicle or corpus luteum that had caused symptoms severe enough to require operation in the years 1929 to 1934 at the Massachusetts General Hospital.

Such hemorrhage from rupture of the graafian follicle or corpus luteum may cause symptoms of severe or mild abdominal pain and it may be serious enough to require immediate operation or so inconsequential that observation and rest in bed is the only necessary treatment. The consideration of this condition is extremely important in determining accurately the diagnosis where abdominal pain is the principal symptom. Unquestionably many cases of "appendicitis" in young women have undergone appendectomy with a mistaken diagnosis when the actual condition was the pathology considered in this article.

These authors mention the conclusion of many

investigators that the time of rupture of the graafian follicle is the mid-point of the menstrual cycle. "Discomfort in any woman from the supposed time of ovulation to the on-coming menses may be due to rupture or bleeding."

The following is a summary of the article:

"1. Fifty-eight cases of rupture of the graafian follicle or the corpus luteum simulating other acute abdominal disease are reported.

"2. Trauma has not been found to be an etiological factor in any case of this series.

"3. The relation of the onset of symptoms to the day of menstruation is an important diagnostic point.

"4. The sudden onset of pain, low temperature, slightly elevated pulse, and low white blood count, all out of proportion to the pain, are suggestive of this lesion in the mild cases.

"5. Patients with severe hemorrhage following rupture show signs of a more diffuse tenderness, are sometimes faint, and have referred phrenic nerve shoulder pain.

"6. A lower abdominal paramedian or midline incision is advised, so that the ovaries may be explored under direct vision.

"7. The ovary should be conserved if possible. The lining of the lesion may be shelled out and the ovary reconstructed with a fine atraumatic suture.

"8. This normal or pathological physiology of the ovary should be considered in the differential diagnosis of acute abdominal pain."

COMMENT: Pain from ruptured graafian follicle and also from hemorrhage from the ruptured follicle or the corpus luteum is a very common complaint. It is significant that the majority of these cases are due to hemorrhage within and from the corpus luteum and occur from the time of supposed ovulation to the onset of the next expected menstruation. In an otherwise normal pelvis nearly all of these enlarged ovaries will return to normal without intervention. Most will demonstrate in the ensuing menstruations either changes in time, duration or amount.

Some of these ovaries will become so large that twisting of the pedicle will occur with gangrene, necessitating early operation.

Except in these patients with twisted pedicle and gangrene and except in the patients where there is prostration and severe constitutional reaction, a period of observation will many times lead to the avoidance of surgical operation or to a more conservative and therefore better procedure. Naturally, in those cases where appendicitis is the probable diagnosis, though there remains some doubt after most careful investigation, appendectomy through an incision allowing inspection of the pelvis is the procedure of choice because of the dangers in relation to the acute inflammatory disease of the appendix. Otherwise it is my firm conviction that one may thus avoid some unnecessary operations and that a better and more conservative operation, if necessary, can be done after a reasonable period of observation.

Wendell Long.

The Therapeutics of the Cook County Hospital: Causal Therapy of Contact Dermatitis

In collaboration with Theodore Cornbleet, Bernard Fantus, Chicago (Journal A. M. A., December 21, 1935), discusses the casual therapy of contact dermatitis as it is carried out by the attending staff of the Cook County Hospital. The discussion entails the discovery of the irritant, the prevention of exposure to irritant, the removal of the predisposing cause, desensitization and symptomatic treatment.

INTERNAL MEDICINE

Edited by C. E. Bradley, M.D., Medical Arts Building,
Tulsa; Hugh Jeter, M.D., 1200 North Walker,
Oklahoma City

By C. E. BRADLEY, M.D.

Allergic Bronchopneumonia. Hyman Miller, M.D., George Piness, M.D., Ben F. Feingold, M.D., Los Angeles, Calif., and Townsend B. Friedman, M.D., Chicago, Ill. *Journal of Pediatrics*, December, 1935, Vol. 7, No. 6, Pages 768-789.

In an effort to clarify and point out the fact that often times pulmonary disturbances which appear symptomatically to be infectious are in reality allergic, the authors present eleven case histories with roentgenograms by which they have followed the course of the pulmonary processes which were responsible for the cases; they also report findings and conclusions from over 1200 other cases.

The patients in the eleven cases presented ranged from two to ten years of age with one six weeks old female, and one three months old male. The cases were about equally divided between males and females. All except four gave family histories of allergy; two of those who did not gave negative histories for allergy, and in two cases family histories were not available.

They presented histories of frequent attacks of bronchitis, with fever, asthma, several attacks of pneumonia, eczema, periodic attacks of coughing, attacks of abdominal pain and urticaria, frequent colds with nasal obstruction, coughing, sneezing and fever.

On examination and during their residence in the hospital they presented the following symptoms: fever, labored respiration, rapid difficult breathing which was often bronchial, severe coughs, dyspnea, allergic vomiting, with pain in ear suggestive of otitis media, eczema, and atelectes.

In all cases the Mantoux tests were negative.

Diagnoses of bronchopneumonia, hilus pneumonia, chronic follicular tonsillitis with acute rhinitis, perifocal tuberculosis, active tuberculosis, pneumonic process with possible lung abscess, bronchiectasis, foreign body in the lung, and in one case asthma were made clinically and roentgenologically; these were of course abandoned for a diagnosis of asthmatic bronchitis and allergic bronchopneumonia because of the rapid recovery which the patients made when they were given specific treatment after being tested in the allergy clinic for sensitivity to various foods, irritants, grasses, etc.

The other cases reported were very similar to those given in detail, and the authors classify these various allergic phenomenon into three groups: (1) those resulting from bronchial obstruction; (2) those resulting from an allergic reaction of the lung parenchyma; and (3) a combination of the two processes.

Bronchial obstruction in an allergic individual may result from constriction in spasm of the bronchial musculature; from thickening of the walls of the bronchi by edema, hyperplasia, hypertrophy and cellular infiltration; from secretion of thick and tenacious mucus which occlude the bronchi; and from paradoxical collapse of the bronchi during expiration.

Allergy of the lung parenchyma has been demonstrated in the anaphalactic reactions of animals, experimentally; as well as in bronchial involve-

ment and bronchial asthma in man, clinically and from histological examinations.

These three classes of allergic phenomenon were discussed in detail, and the symptoms and direct explanations of these symptoms were given.

The authors feel that the data and the discussion which they have presented justifies the recognition of a definite clinical entity which they choose to call "allergic bronchopneumonia." A complete summary of symptoms, etiology, course, chronic and recurrent forms, complications, pathology, and prognosis of this syndrome is given.

Third Generation Syphilis. Harold A. Rosenbaum, M.D., and Harry Aulknner, M.D., Chicago, Ill. *The Journal of Pediatrics*, Vol. 7, No. 6, December, 1935, Page 797.

Because the question of third generation syphilis is still a controversial one, the authors present two family histories with evidence of third generation syphilis. Both examples meet Stokes rigid criteria for the identification of the third-generation syphilis, that is:

1. Acquired syphilis must be demonstrated in the grandmother and preferably also the grandfather.

2. Prenatal as distinguished from acquired syphilis must be demonstrated in the mother of the third generation case. Acquired syphilis must be excluded in her case, and the father must be proved to be healthy.

3. There must be incontestible evidence of prenatal syphilis in the third generation.

4. Manifestations must appear soon after birth in both the second and third generations.

The grandfathers in both of these families are dead; they died at an early age, suddenly, and of unknown causes.

In the first family the grandmother had a four plus Wassermann and Kahn, and was not treated until 1933. The first, third, fourth, and sixth pregnancies showed four plus Wassermann and Kahn reactions; and the third and sixth had Hutchinson teeth. The first, John, was married, but his wife and family showed no evidence of the disease. The second pregnancy was stillborn, and the fifth, his wife, and children show no evidence of syphilis.

The third pregnancy married and her husband has never shown any evidence of syphilis, and his Wassermann and Kahn reactions have always been negative. Their first child died of burns at six and one-half years, and no records were obtainable excepting that the mother had a four plus Wassermann at the time of this pregnancy. The second and third children had four plus Wassermann and Kahn reactions with typical syphilitic facies, rhagades, epitrochlears large, dactylitis. The fourth and fifth children were not syphilitic.

The grandmother in the second family had a history of acquiring syphilis from her husband, which was confirmed by her physician, and they both received treatment in 1910.

Their first child showed four plus Wassermann and Kahn reactions, but gave no clinical evidences of syphilis. Her husband had negative Wassermann and Kahn reactions and gave no history or physical findings of syphilis. Their first child was clinically and serologically free from syphilis. The second gave a two plus Wassermann in the cholesterol with negative acetone and Kahn reactions on November 6, 1934. subsequent Wassermanns on November 13, gave one plus reaction in cholesterol with negative acetone and Kahn; and on Novem-

ber 22, Wassermann and Kahn reactions were completely negative.

The second child of the grandmother was clinically and serologically free from syphilis.

The third child of the grandparents was clinically negative for congenital syphilis, but had a four plus Wassermann and Kahn. Her husband was clinically and serologically negative for the disease. Their first child was also clinically and serologically negative for syphilis. The second and third pregnancies were induced miscarriages; the fourth had paroxysmal hemoglobinuria, with four plus Wassermann and Kahn.

The grandparents' fourth child was a still birth, but the physician who delivered it authenticated evidences of syphilis.

These two complete family histories give unmistakable evidence of third generation syphilis.

By HUGH JETER, M.D.

On Chronic Hypertension of Nervous Origin. J. J. Izquierdo, M.D., Mexico, D. F. *Journal of Laboratory and Clinical Medicine*, Vol. 21, December, 1935, Page 235.

In this the author has given the practical and formulative principles concerning the nervous regulation of hypertension in both animals and the human. He has in a direct, conclusive way illustrated beautifully the regulatory nerve trunks and located definitely the area at the bifurcation of the carotid arteries where the pressure receptors and the pressor-sensitive nerves originate.

Numerous experiments and observations in connection with pressure on and below this area in the human seem to demonstrate definitely that there does exist a form of hypertension which is due to a reduced, or perhaps absent, function of this self-regulating mechanism. It is shown in animals that continuous (for more than a year and one-half, which is about one-fourth of their normal lifetime) pressure in dogs (two hundred to two hundred fifty mm. Hg.) causes calcification of the aorta.

The author indicates that in man the morbid lesion must be located in the receptors themselves, primarily or secondarily altered by previous changes in the arterial walls, where they are located. He says: "There is no possible doubt about this: hypertension may lead by itself to the production of arterio-sclerosis, probably as the result of strain which a continuous exaggerated distension puts upon the circulation within the arterial walls."

It appears that the existence of a primary and permanent hypertension, due to functional deficiency of the nervous regulatory apparatus, seems to be on its way toward recognition.

EYE, EAR, NOSE AND THROAT

Edited by Marvin D. Henley, M.D.
911 Medical Arts Building, Tulsa

Staples and Double-Pointed Tacks as Foreign Bodies. Jackson and Jackson, M.D's., Philadelphia. *Archives of Otolaryngology*, November, 1935.

The incidence and etiology is given after the object is described. They are much more difficult and dangerous to remove than are single pointed objects. This clinic records fifty-one cases of double-pointed objects, of which twenty-seven

have been of the unbendable, unbreakable class; the other twenty-four cases are not classified.

The pathologic changes are at first very slight because the foreign body is metallic and not obstructive. The points are soon hidden in the mucosa and become covered with an annular edema which makes the search for them the more trying. Corrosion occurs with subsequent infection and inflammation to the surrounding tissues. Ventilation and drainage are impaired and we have the same condition as of a drowned lung—pus in the normal passages. Later if the object is not removed the passages break down and there is a lung abscess. Ionization during the process of oxidation sometimes prevents suppuration.

Symptoms are variable. Usually at first there is coughing, choking and gagging which may or may not be noticed in children. Weeks or months may follow devoid of any symptoms until a productive cough appears with the complete syndrome of a chronic pulmonary sepsis. At this stage there is a septic temperature while in the early stages there is rarely any fever at all. Pulse and respiration increase with the sepsis. Comparatively there is less leukocytosis than in any other pulmonary condition. It is this secondary infection that proves fatal unless the cause is removed.

It is possible to remove all such objects through the mouth practically without mortality unless there has been previous ill advised unsuccessful efforts at removal. "Advancing points perforate whereas trailing points are relatively harmless" is an axiom never to be forgotten in dealing with pointed objects. If the objects are bendable the points are brought together and sheathed in the mouth of the bronchoscope. In this class are double-pointed pins, paper clips and metal clips. The typical hair pin may also be considered here. The later type of hair pin has closely approximated ends which are no particular hazard. In the unbendable, unbreakable, double-pointed foreign bodies such as staples and double-pointed tacks, version of the foreign body must be done before removal to prevent perforation and tearing of the bronchial wall. Jackson has a special staple bronchoscope for this purpose. Preference is given to sheathing and extraction in the fluoroscopic room with use of the biplane fluoroscope. The most vital reason for this is to be sure that both points are sheathed before there is any traction made.

The table which is published with the article includes illustration and name of the foreign body, age and sex of the patient, location and sojourn of the foreign body, anaesthetic used, the problem which the operator had to solve, the forceps used, the point of seizure of the foreign body, the result obtained, the time consumed in the operation and the final comment.

Neurinoma de la orbita. (Neurinoma of the orbit).
C. S. Damel and R. R. Villegas, R.R. (South America). *Archives de Oftalmologia Hispano-Americanas*, February, 1935. Published in the *British Journal of Ophthalmology*, December, 1935. Abstract by E. E. Cass.

Damel and Villegas state that neurinoma of the orbit is a very rare tumour. They have only been able to find twelve cases in the literature on the subject and in these cases the nomenclature has varied considerably, according to the authors' conception of the pathology of the condition.

The case that they themselves describe is that of a young man, thirty-six years of age, who had a past history of syphilis, and had had erysipelas on the left side of his face. For three years he had had a gradually increasing proptosis of the left

eye; when examined by the authors he had an appreciable proptosis of the left eye with some deviation laterally and downwards. The vision was normal and nothing abnormal was found in the fundus. As the Wassermann reaction was still positive in spite of previous treatment, they gave him further anti-syphilitic treatment.

Three months later, when seen again, a tumour could be felt in the orbit, and there was some limitation of upward and outward movements of the eye. The pupils were equal and reacted well; the vision was still normal, but there was some oedema of the disc.

An operation was performed, and a tumour was found situated between the optic nerve, which supported it like a hammock, and the roof of the orbit. The tumour was removed and convalescence was uneventful. The vision was normal after the operation, and the oedema of the disc disappeared.

The tumour itself was about one and one-half inches long, and it had a small central cavity. On the surface it showed various zones of hemorrhages with numerous yellowish-white areas.

The microscopic appearance of this tumour is described at some length.

These tumours appear in young people, they have a slow growth, and there is very little pain or symptoms until the tumour grows so large that it causes limitation of movements, diplopia or loss of vision when the tumour presses on the optic nerve.

In the authors' opinion the tumour originated in the nerves of the dura-mater of the optic nerve.

Cancer of the Epiglottis. Gabriel Tucker, M.D., Philadelphia. *Annals of Otolaryngology and Rhinology*, December, 1935.

Tucker puts this disease in the extrinsic group of laryngeal malignancies which have early metastasis and extension. This is true of the epiglottitis if cancer occurs on the under or lingual surface. When it occurs on the under surface it is usually slow growing and slow to metastasize probably due to the presence and location of the cartilage of the epiglottis. Conservative surgical treatment, such as removal of the epiglottis, may effect a cure here if the disease has not advanced too far.

He gives three methods of removal of the epiglottis. (1) Removal of the epiglottis by thermocautery or snare through the mouth by means of suspension laryngoscopy. (2) Excision of the epiglottis by the transhyoid approach. (3) Excision of the epiglottis by the lateral pharyngotomy approach.

A case is reported of a cancer of the epiglottis which was confined to its under surface. It occurred in a male, age sixty-seven years. He gave a history of discomfort for a year before examination. Hoarseness was not a constant symptom. Tobacco had been used in moderation, but the use of alcohol was denied. The family history was negative. There was an ulcerating area on the under surface of the epiglottis which was elevated and had the appearance of a cancerous infiltration. The upper surface of the epiglottis was clear as the lesion did not extend to the margin from the under surface. Biopsy showed squamous cell carcinoma. There was no adenopathy present. A preliminary tracheotomy was done ten days before operation. Using the laryngofissure route the author did a total extirpation of the epiglottis. The anaesthetic used was avertin and novocain. The operation is described quite clearly, step by step with the difficulties that one might expect to encounter during such a procedure. The post-operative care is

given and mention is made of the difficulty the patient first had when the feeding tube was removed.

At the end of two weeks the patient left the hospital without the feeding tube or the tracheotomy tube. Three and a half years later the patient appeared to be perfectly well with a normally functioning larynx and a normal voice. Illustrations accompany the article.

Obstructions of the Trachea. Lionel Colledge, London. The Journal of Laryngology and Otology, December, 1935.

Colledge divides the causes of tracheal obstruction into: (1) extrinsic lesions which cause compression of the trachea; and (2) intrinsic diseases in the tracheal wall itself.

In the first group the author places mediastinal tumours, enlarged glands, aneurysms and most common in occurrence, goiters and cancers. If the goitre is benign he advises removal of enough of it to relieve the pressure on the trachea. If the goitre is malignant great caution must be used in any surgical manipulation as the author relates a case of a tracheotomy done where the patient died the following day from blood going down the trachea. Usually the growth has to be divided in a case of this kind in order to reach the trachea and there is not any way to control the ensuing hemorrhage. Long flexible tubes (Konig's) used to pass beyond the obstruction are also unsatisfactory. Crile suggests dividing the sterno-thyroid and the sterno-hyoid in order to give the tumour room to expand.

The author relates of a subsequent patient with an enormous goitre which reached up to under her ears (probably sarcomatous) whom he advised to have nothing done. She was later treated with a radium collar which gave her relief for several months. He is of the present opinion that deep-x-ray is the best manner for treating these patients.

Semon warns one that in doing a tracheotomy for double abductor paralysis you are liable to find another obstruction lower down. He cites a patient with a large goitre and also carcinoma of the oesophagus which caused double abductor paralysis. The patient died during the tracheotomy. An abscess had formed between the oesophagus, the trachea and the right lobe of the thyroid gland. The pilot of the cannula went into the abscess. The author relates a similar experience where the septum between the trachea and the oesophagus was destroyed by the growth and the cannula was passed into the oesophagus. A tracheotomy was prevented on a later case with a malignant disease of the oesophagus which had perforated just above the bifurcation into the trachea.

In the second group are found syphilis, tuberculosis and new growths. Rhinoscleroma is also mentioned. Excepting syphilis of the larynx, syphilis here responds readily to anti-syphilitic treatment.

Tracheal tuberculosis is rare but the treatment of one case is given with its attending difficulties. Resection of the trachea was finally done successfully and a large Jackson tube enabled the patient to speak with a good strong voice. Gluck's experiment with thigh amputation of a duck enabling the duck to breathe through the stump is related.

The author states that sarcoma is as common as carcinoma although primary tumours of the trachea are rare. In these conditions usually the first diagnosis made is asthma. A case of sarcoma of the trachea, in a man age forty, is given in detail. This is an original manuscript without a bibliography.

The Control of Myopia

Edward Jackson, Denver (Journal A. M. A., November 2, 1935), discusses the results obtained by applying preventative and limiting aids in 381 cases of myopia (755 eyes) seen in private practice, determined with cycloplegia and followed through periods of from two to thirty-nine years an average of nine and one-half years. They include patients from four to eighty-two years of age and have been grouped and studied according to the age periods at which they came under observation and at which the constant wearing of the full correction was begun. The careful study of myopia is a step toward the prevention of the blindness of later life. It is not yet known to what extent blindness from cataract and retinal separation depend on myopia or how, through the general nutrition of the eyes, myopia and glaucoma may be related or opposed to each other. Under ten years of age the tendency toward myopia is general and in most myopic eyes the defect is increasing. Decreases in myopia did not occur before ten years of age, but in some patients, placed that early on constant use of the full correction, decreases appeared before twenty. From that time on, about one case of myopia in five showed increase until over sixty, and after that about one in three. Such decrease in the amount of myopia corresponds with the increase of hyperopia, found by Priestley Smith in his studies of the growth of the crystalline lens, between twenty-five and sixty-five years of age. The increase of vision shown, not the better vision with correcting glasses but vision developing gradually as the glasses were constantly worn, was a matter of surprise. It began at the earliest age, and was found at all periods of life. In early life it might be ascribed to the gradual gain in visual acuity, commonly seen after the correction of astigmatism in young people. But after thirty it was best explained by the general improvement of the nutrition of the eye, with the wearing constantly of glasses that placed it on a footing of equality with the emmetropic eye or with the hyperopic eye not used excessively for near work. The small proportion of eyes in which vision decreased, not more than one in four, even after middle life, should dispel the idea that nothing can be done to control myopia and preserve the usefulness of myopic eyes. Myopia can be controlled by removing its causes and securing the essential conditions for healthy eye work.

Speed and Skill Are Aid in Asphyxia Emergency

Asphyxia, oxygen want, comes about through interference with the ordinary act of respiration. Of the many causes that induce death by asphyxiation there is none more common than asphyxia resulting from accidents of birth, according to Dr. Paluel J. Flagg in the second of the series of articles on "P. A. D., Prevent Asphyxial Death," appearing in the February Hygeia.

The physician is trained to deal directly with the problem of asphyxia. He can remove all foreign matter in the throat by suction. He can deliver oxygen and carbon dioxide directly into the patient's throat or even to the lungs under pressure that is accurately measured and safe.

Glands and Behavior

While the glands of internal secretion may influence body build and behavior, they alone are not entirely responsible. Instead they add their influence to all other parts of the body in order to bring about a well balanced state of affairs, according to Dr. H. S. Rubenstein whose concluding article on "Glands—Their Influence on Body Build and Behavior" appears in the February Hygeia.

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Important Features in Urologic Surgery of the Posterior Urethra Occasionally Overlooked*

ELIJAH S. SULLIVAN, M.D.
OKLAHOMA CITY

The subject of this paper is to direct attention to a class of cases which are troublesome to the profession; bring a great deal of discredit upon it, furnish many sexual neurasthenics and produce in general a kind of semi-hopeless invalidism that is characterized by chronic mild discharges from the urethra, with not infrequent exacerbations, or with irritability of the bladder, dysuria or obstructive symptoms, which simulate, to a very considerable degree, the phenomena which characterize prostatic hypertrophy.

The development of a cure for these cases has created a kind of knowledge and mechanical skill that is possessed neither by the genito-urinary specialist of limited experience, whose practice is chiefly confined to the treatment of acute gonorrhea, nor by the general surgeon, who has acquired a certain amount of skill in the removal of the prostate gland, but a superficial urological knowledge.

I refer more particularly to affections of the zone lying between the uro-genital diaphragm and the bladder neck—the region of the prostatic urethra. In this very limited anatomic zone is found a number of lesions that are entirely curable, and yet are not discoverable even, excepting through well lighted urethrosopes or cysto-urethrosopes, and which must be treated through the narrow field of these

same instruments. To learn to use these instruments without occasioning damage to the patient, greater than the amount of benefit that can be derived, takes a great deal of time with each case, and a great many cases, before the necessary dexterity can be attained. The general surgeon neither has the time nor the repeated opportunity to acquire this skill.

We owe the perfection of the instruments required for the purpose of diagnosis and treatment, to the tireless research of a very few clever enthusiasts. At the head of these stands the names of Joseph F. McCarthy, Leo Buerger, J. Bently Squires of New York, Bransford Lewis of St. Louis, George S. Luyis of Paris. With the urethrasopes and cystoscopes which these men have furnished to the profession, the cure of chronic obstructive or infectious granuloma, adenoma and papilloma of the posterior urethra and bladder has become reasonably easy, to those who will take the time, having the opportunity to study such cases.

The prostatic urethra is peculiarly subject to infection. By reason of the continuity of tissue with the anterior urethra, it is liable to all the infections which follow impure sexual congress. It is deeply placed in the body, lined with mucous membrane into which numerous ducts discharge the contents of its many glands on the floor, sides and roof of the urethra. It is connected with the acini of the prostate gland, lying beneath the mucosa of the

*Read before the Urological Section, Annual Meeting, Oklahoma State Medical Association, Oklahoma City, May, 1935.

bladder, with those in the walls of the colliculus, some opening into the utricles and some into the urethra, in addition to the channel connecting it to the seminal vesicles by means of the ejaculatory ducts. Infection in the presence of heat and moisture, conduces to the growth of pathogenic bacteria from their spores producing in this region fungus growth, polypi of the first and second class, papillomata, cysts, granuloma, small adenomata developing from low grade changes in the superficially lying glands, directly underneath the mucosa of the urethra, or sprouting from tags of compressed capsular remains of the prostate after enucleation of tumors of that organ. These are the most frequent affections which call for interference by the urological surgeon in order to rid the patient of chronic discharges, functional impotence, continuous vesical irritations, disturb micturition and painful, imperfect or premature ejaculations. In order to give some idea of the scope and character of these cases I will report a few upon which notes have been kept and the method of cure recorded.

Case 1. Mr. E. B., retired capitalist, age seventy-three, multiple polypi and adenomata following pathological changes in the capsule long after the removal of the prostate. Applied to me February 19, 1932, complaint irritable bladder which had lasted more than three months. This gentleman had a supra-pubic prostatectomy in 1926. Cysto-urethroscopic examination showed a very good bladder but in the prostatic urethra, just outside the neck of the bladder was a large polypus. On the left wall there was a large nodular growth, which shown through the mucosa like a group of acini that had grown out from a capsular tag. Also a small polypus in front of the colliculus on the floor of the urethra. On March first the growth in front of the colliculus was thoroughly burned away with an electro-coagulating wire through a pan-endoscope. On March 30th the former work was inspected and found to be good and a disk shape polypus which appeared to be just in front of the bladder neck on the floor but which was partially within the bladder was burned off. On the thirteenth of April the remaining polypi was burned off the bladder neck. On the fourth of May in an examina-

tion some small adenoid tumors which were left in the mucosa at the neck of the bladder, and which had escaped attention heretofore, were destroyed. These operations were all done under local anesthesia, and should not be at any closer intervals than two to three weeks.

This gentleman was examined at monthly intervals until November, 1932, and regularly treated with the electro-coagulation through the pan-endoscope or with a twenty-five per cent silver nitrate through a urethroscope, until that date when everything was healed and the entire channel smooth, his urine clear and he was passing a good stream without any residual urine of which he had about thirty-five cc. when he first came to me. Since that time he has reported about every six months and was passing his urine without difficulty or pain.

Case 2. Mr. M. W., age thirty-two. This is a case illustrating that rather frequent class of chronic urethral discharges, treated year after year for gonorrhea by irrigations, dilations with steel sounds, Kollman dilators and instillations, when there is no remnant of gonorrhea, but cystic and polypoid degeneration of the mucosa of the prostatic and membranous urethra, which never does disappear until removal by local surgical measures.

In April, 1928, he contracted gonorrhea which was apparently cured in a short time. One year later he had what appeared to be a new attack. In 1930 the discharge appeared again. In March, 1931, a morning drop appeared. This condition had continued with shreds in the urine up until the time he came to see me, which was July 10, 1931. His physician had assured him that, failing repeatedly to find any gonococci he could marry. He came to see me to find out if this were true. He had a narrow meatus, which prevented the introduction of any optical instrument; after this was slit, an examination of the urethra with the urethroscope showed quite an extensive submucous infiltration between the peno-scrotal junction and the scrotal-perineal junction. The mucosa bled easily and seemed to have lost its normal lustre—in other words he had chronic submucous infiltrative urethritis.

Examination of the prostate through the

rectum showed a mark node in a left lower part. Examination of slides made from secretion, three days in succession after the irritation from the examination had subsided, showed no gonococci.

On the fourteenth of July a cysto-urethrascopic examination was made. The colliculus was studded with small cysts and there were also a number of small cysts anterior to the colliculus. Some cysts were noticed in the bulb and a membranous deposit on the mucosa at the peno-scrotal junction. These diseased parts were all treated with twenty-five per cent solution of silver nitrate through the urethroscope. His condition then was as follows:

1. A general staphylococcus infection of the mucous membrane of the phallic urethra, with edema of the submucous structure.
2. Some true soft strictures.
3. A few ulcers that bled easily.
4. Cystic degeneration of prostatic urethra.

The patient was kept under treatment daily for the anterior urethra, until the first of August when the posterior urethra was inspected again and looked entirely well. The urine was clear and there was no discharge.

In January, 1933, he came again complaining of discharge. He stated he thought he had contracted a fresh gonorrhea. His prostate was massaged; no secretion appeared at the meatus.

The material coming from the massage was removed from the bladder with a catheter and consisted of small epithelial cells non-motile spermatozoa, lecithin globules, a few leucocytes but no organisms of any kind. Then his posterior urethra was examined with a urethroscope and the same picture of cystic adenoma on the top of the urethra, back of the colliculus in front of the bladder neck, was seen, like that presented when he first came to see me. This time, the electro-coagulating wire was used to destroy the tumors.

I have examined him every six months since his last treatment. His urethra is smooth; the utricle, verumontanum and seminal ducts present themselves in an

absolute healthy picture; the prostate is normal, both in its feel through the rectum and in its appearance. He is still possessed with the idea of getting married, but he feels much more comfortable about it, because he is now perfectly potent, whereas when he first came to see me his sexual power was markedly on the wane. He has no discharges and no reason for any, because after the stricture of the anterior urethra was first discovered he was treated by frequent and careful dilations, which did not extend into the posterior urethra, at proper intervals.

Case 3. Mr. A. C., age fifty. Came to me in April, 1933, complaining of bloody semen, a clear discharge from the urethra at different times for about a year and a half, and pain in the perineum. This pain could be relieved by hot water enemas or hot packs over the left kidney.

In his history he related that following marriage in 1925 his wife had had two miscarriages; that she was operated upon for prolapse of the uterus, and following they practiced withdrawal for two years. He noticed in July, 1932, that he had a bloody emission which was repeated in October and in March, 1933.

The differential diagnosis was between polypus or papilloma of one seminal vesicles or ampullae of the vas; polypoid degeneration of the posterior urethra; papilloma or ulcer of the posterior urethra; and chronic prostatitis from withdrawal, which is not infrequent.

Local examination showed perfect genitals, prostate moderate in size, normal in consistency, the vesicles barely perceptible to the finger. After examination the urine contained pus, the appearance of which led me to believe that it came from the seminal vesicals, which had been the opinion of a local surgeon in whose care he had been for a little while.

Cysto-urethrascopic examination showed a normal bladder. There was a polypoid growth found on the floor of the urethra in the supramontane region. Both ureters were catheterized and pyelograms taken because he was much troubled about his condition and I thought it better

to rule out any possible bleeding of the kidney with reflex symptoms. The result of this examination showed both kidneys to be normal in function, of normal size, and in normal position and secreting normal urine.

At a later examination, the polyp was found to involve the anterior parts of the colliculus and in destroying the polyp with the electro-coagulating wire, the colliculus itself was pretty well destroyed; this was done in several sittings, because it was desired not to take any chances of destroying too much. The treatments were made at monthly intervals of May, June and July. At his examination on the third of August his posterior urethra was entirely clear of any obstructions; the colliculus reduced to a level of the floor of the urethra; both seminal ducts stood wide open and he no longer complained of any irritation. In February of this year he stated he had not had any bloody semen at any time since his treatment and that his sexual power was much better and the irritation had ceased.

Case 4. Mr. R. A., age thirty-six, came to me on January 13, 1934, giving a marked history of complete impotence. He is a strong man, physically and mentally, and conducts a large business enterprise of a nature which gave him plenty of physical exercise.

In the course of examination he was found not to have any strictures. The material obtained from the prostate by stripping showed no spermatozoa and no organisms. Urine contained a faint trace of albumen, a little blood, some casts, which suggested some degree of nephritis. He gave a history as a child of having had tuberculosis of the hip joint. January 20, he was examined with the new McCarthy Routine Cystoscope. The posterior urethra was found to be full, top, bottom and sides, of granulomata, cysts and polypi, as was also the entire neck of the bladder. I could not see a trace of the colliculus, nor could I see any normal mucous membrane. On January 30, all the growths in the urethra in front of the colliculus were electro-coagulated. The posterior portion of the urethra was treated with silver nitrate fused on a probe. The anesthetic used was H. M. C. tablet given three-fourths of an

hour before operation with a solution 1-500 nupercaine in the bladder and urethra.

This was repeated on the twenty-sixth of February. The number of growths was very much reduced. On the twelfth of April the remaining cysts were destroyed by electro-coagulation. At this sitting some inflammatory areas, left from the previous treatment, were touched with a twenty-five per cent silver nitrate. On the fourth of August no cysts could be seen in the urethra and no tumors. The colliculus looked entirely healthy and also the urethra.

This man's potency gradually returned, and Christmas last year he contracted a fresh gonorrhea, for which he has been under treatment until about the first of April, when, after having seen no discharge for a period of ten days with no treatment, I made a urethrascopic and cysto-urethrascopic examination of the bladder neck and posterior urethra, and the entire urethra out to the meatus without finding anything abnormal or pathological.

I could multiply these case histories out of my experience in the last ten years many times and have just as interesting cases to report. The treatment of such cases is very interesting and satisfactory. It is a field of the trained urologist. It is hardly fair for the medical profession in general to keep this class of cases indefinitely on a treatment of large size sounds and the blind cauterization of the prostatic urethra with instillations of silver nitrate solutions and finally dismiss them as incurable cases of gonorrhea.

—o—

Outbreak of Undulant Fever Due to *Brucella Suis*

Benjamin G. Horning, Hartford, Conn. (*Journal A. M. A.*, December 14, 1935), speaks of an outbreak of undulant fever with fourteen cases and three deaths that occurred in a home for elderly persons. Raw milk from the institution herd was the only source of infection found. The herd consisted of thirty-six cows and one bull. The blood from two cows was positive and from another suggestive for brucella infection. *Brucella suis* was isolated from the blood of two patients and from an abscess of a third patient. Blood was drawn from thirty-two swine kept by the institution. Nine were positive and seven suggestive for brucella infection. The cattle had opportunity for natural infection from the swine. Epidemiologic evidence suggests that the outbreak was due to *Brucella suis* received from drinking raw milk from cows infected with *Brucella suis* from swine.

Urological Methods in the Treatment of Nephritis*

BASIL A. HAYES, M.D., F.A.C.S.
OKLAHOMA CITY

The therapy of kidney disease has always been unsatisfactory, and has depended largely upon diet, rest, purgation, and diuretics. Even the pathological and clinical classifications of such disease have been so mixed and contradictory that it is small wonder that the therapy is in confusion. Today, however, most writers are beginning to unite on the classification of Volhard and Fahr, and are planning their therapy accordingly. The object of my paper is to point out that the urologist has a place in this therapy and to show where-in he can be of assistance.

We customarily think of nephritis as being divided into a so-called medical type; that is, glomerulonephritis with its subdivisions, tubular degeneration or nephrosis, and arteriosclerotic nephritis; and a surgical type, known as pyelitis and pyelonephritis. Any of these conditions may give rise to blood, albumin, pus in the urine, or increase of blood pressure. Certainly any of them can produce anemia. Edema may be caused by any of them except arteriosclerotic kidneys and is occasionally caused by these. Since any one of these types of nephritis may give rise to any one of the symptoms produced by the other, it is manifestly impossible for the physician to be sure as to the particular type he is dealing with. The medical man thinks he can be sure by a urinalysis, a blood count, possibly a blood chemistry, a flat x-ray picture, and a blood pressure determination. The urologist knows very well that this is impossible because every urologist has seen cases of marked pyelitis where there was no pus in the urine. Every urologist has seen cases of hydronephrosis in which the only local symptom of trouble was pain in the kidney, and many of us have seen cases where a marked hydronephrosis was manifested only by an ascending blood pressure and the development of a marked anemia.

In attempting to explain the specific dynamic cause of the onset of an infection in the glomerulus, Volhard assumes an angiospasm, which he thinks might have been caused by sudden chilling or some similar factor. The urologist is equally justified in assuming that this angiospasm is caused by a sudden back pressure of urine, which might or might not have been brought on by sudden chilling or exposure. For example, a patient riding in an automobile over a long distance fails to empty his bladder, and it becomes quite full with the intravesicular pressure going to a higher figure than it has ever reached before. Immediately thereafter he goes home, takes a chill, and goes down with nephritis. A young woman goes swimming. She is out long hours and fails to empty her bladder during that time. She goes home that night and wakes up next morning with a fever and nephritis. Was it angiospasm due to cold or was it simply retention which caused an increase of pressure within the kidney and a subsequent angiospasm? My experience as a urologist leads me to think that the latter explanation is quite frequently true.

It appears to be fairly clear that bacterial nephritis does not develop in a normal kidney unless there is a load of specific infection such as tuberculosis or syphilis which attacks the organs. Pathogenic organisms have not been shown to be selective for the kidney and will not alight in it any more than they will alight in other portions of the body; but if an individual possesses congenitally defective kidneys or kidneys suffering from an overload of work from any cause whatever, either congenital or acquired, that individual is in perfect condition for the development of nephritis provided he acquires a streptococcic infection such as is seen in tonsillitis, scarlet fever, etc. In such a case, therefore, the urologist is of great value in finding out the type of disability which affected the kidneys before infection and naturally still affects them

*Read before the Urological Section, Annual Meeting, Oklahoma State Medical Association, Oklahoma City, May, 1935.

X-Ray in Diagnosis and Treatment*

EDWARD D. GREENBERGER, M.D.
McALESTER

The immensity of this subject, I'm sure, is appreciated by every one here. Almost all of you have witnessed the rapidity with which x-ray has invaded every speciality of medicine and surgery in the last twenty years, both in diagnosis and treatment. X-ray therapy, at first, was given to the hopeless cancer patients and given empirically to the patients who had some lesion of disturbance that the physician or surgeon could not cure or alleviate. Today, x-ray therapy is on a rational basis. I will attempt to outline the rational and the indications of x-ray therapy and attempt to bring to your attention the wide scope of x-ray in diagnosis.

X-RAY THERAPY

"The rational of modern x-ray therapeutics is not based upon special technics or methods applicable to each different disease, but upon the knowledge of the effect of the rays on the pathology or disease processes. The cells composing the pathological tissues are normal cells which have undergone certain changes, inflammatory or neoplastic; or have assumed abnormal functions with consequent disturbances of the physiologic processes of the individual." X-rays have the power to inhibit and destroy such cells and thus bring about normal functions. The cells or tissues of which the living organism is composed vary in their sensitiveness to radiation. It is this difference in response which forms the basis for our rational approach to therapy. The more embryonic or least differentiated the cells, the greater the response to x-ray. The lymph cell is most sensitive, poly next, then the epithelial cell, *et cetera*. The cells and tissues of the body are listed in the following order according to their sensitiveness:¹

- a. Primitive blood cell.
- b. Germinal cells of ovary and testicle.
- c. Blood forming tissues, including

cells of the red bone marrow, lymphatic system and spleen.

- d. Some glands of internal secretion, such as thymus, pituitary, adrenals and thyroid.
- e. The skin and its glands and hair follicles.
- f. Abdominal viscera, including the liver, intestines, pancreas, kidney and uterus.
- g. Connective tissue consisting of muscles, fascia, tendons, cartilage, bone, fat and nerve cell.

Knowing the type of cell or tissue causing the pathology or disease, we can predict the result, determine the preferable intensity to be used and determine whether x-ray should be combined with radium, surgery or other therapeutic agents.

The indications for x-ray therapy based on these principles can be grouped under the following headings:

1. Tumors.
2. Inflammatory conditions.
3. Physiological and nervous system disturbances.
4. Blood dyscrasias.
5. Skin diseases.

TUMORS

The type of response to x-ray depends, as stated, on the sensitivity of the matrix and its pathological cells and the amount of differentiation of the cell. The most sensitive tumors therefore are:

1. Lymphoblastomas (including Hodgkins).
2. Embryonal carcinoma of the testes and ovaries.
3. Wilms tumor of the kidney.
4. Ewing's tumor (endothelioma of the bone).
5. Multiple myeloma.
6. Giant cell tumor of the bone.
7. Hemangioma.

*Read before the Southeastern Oklahoma Medical Association at McAlester, Oklahoma, December 10, 1935.

8. Basal cell epithelioma.

Moderately radio-sensitive tumors are:

1. Carcinoma of the uterine cervix.
2. Carcinoma of the thyroid.
3. Carcinoma of the breast.
4. Epithelioma of the mouth and tongue and bronchus.
5. Squamous cell of the skin.

Radio resistant tumors would be those at the end of the above list and those whose cells are more mature, *i. e.*, fibroma, fibro sarcoma, osteogenic sarcoma, adenocarcinoma (except cervix), carcinoma of the stomach, etc. A complete classification of tumors according to sensitivity has been listed by Dr. Desjardins of Mayo Clinic.²

The question often raised by a surgeon who contemplates the removal of a malignant growth is, when should x-ray irradiation be applied? The indications for pre- and post-operative irradiation are very clearly stated by the great American surgeon, the late Dr. J. C. Bloodgood. A summary of his paper appearing in the *Radiology Journal* in June, 1934, is as follows:

1. Attempt irradiation first in certain operable tumors, the complete removal of which means unusual mutilation, as carcinoma of the rectum, tumor of the kidney, etc.
2. Pre-operative and pre-biopsy irradiation of ALL bone tumors, including those of the jaw. In adamantine carcinoma of the lower jaw, for example, irradiation relieves the pain and enables complete resection.
3. All recurrent tumors, operable or not, irrespective of known pathology, as carcinoma of the lip.
4. In regard to carcinoma of the cervix, there has been a complete shift from surgical removal to irradiation alone—both x-ray and radium. Surgery is used as a supplement.
5. Breast tumors:
 - a. Pre-operative irradiation is used in operable carcinoma in patients refusing operation or who are poor risks. Otherwise operation followed by full course of x-ray.
 - b. In all clinically doubtful tumors of the breast. Dr. Bloodgood

stated that no harm can occur by waiting while patient is receiving x-ray therapy.

- c. Inoperable carcinoma of the breast.
- d. In cases like cancer *en cuirasse*, where it is wisest to perform irradiation before operation.

The statistics on five-year cures of carcinoma of the breast is given by most authorities as 34.3 per cent by surgery alone, 44-plus per cent by combined surgery and x-ray irradiation. Many radiologists, as Arthur C. Christie, of Washington, D. C., are strongly advocating intensive pre-operative x-ray irradiation in an attempt to increase the percentage of cures. Their objection to post-operative irradiation alone is that the cancer has either already been completely removed, or that the cancer has been traumatized and very likely metastasized by the operation.

A reference available to the general practitioner and surgeon in line with the subject of tumors is Dr. Chamberlain's paper appearing in *Journal A. M. A.* on subject "Modern Concepts of Roentgen Therapy in Cancer."³ In his conclusion he states: "Today the radiologist and the surgeon stand face to face, each in need of the other's help, each ready to do his proper share of the work of combatting cancer. The radiologist is just as anxious to avoid taking human life by depriving a patient of the benefits of properly indicated surgery as the surgeon is anxious to avoid the futile mutilation of a patient who might better be treated by irradiation."

X-RAY IN INFLAMMATORY DISEASES

In every inflammatory condition there is a leukocytic infiltration composed of polys and lymphocytes, very sensitive cells to x-ray. In the early stages of acute inflammations, x-ray causes resolution of the area involved. In the later stages, it hastens the suppurative process, and enables the surgeon to incise, if necessary, much sooner. Inflammatory diseases are shortened and pain markedly relieved by x-ray irradiation. X-ray has definitely been proven of value in cellulitis, furuncles, carbuncles, lymphadenitis, parotitis, erysipelas, paronychia, synovitis, adenitis, etc. In chronic inflammation, it causes

fairly rapid resolution. Some huge non-specific cervical glands in infants and children disappear often within ten days following irradiation. In specific lesions, as tuberculous glands, actinomycosis, blastomycosis, x-ray has proven to be very valuable. Very striking results have been obtained in gas gangrene by using the ordinary hospital portable unit. The oxidizing property of x-ray on gases is supposed to form H_2O_2 and in this medium the anaerobic bacteria are killed.

THE PHYSIOLOGICAL DISTURBANCES AND DISEASES RESULTING FROM ENDOCRINE AND NERVOUS SYSTEM INBALANCE

We know that the endocrine system and autonomic nervous system are closely bound together, both functionally and anatomically. In any dysfunction of either system, we therefore have difficulty in finding the primary source of the physiological disturbance. For example, what causes hyperthyroidism? Most internists agree that the cause is not primarily in the thyroid; many believe the pituitary is at fault. Dr. Crile and numerous other surgeons have cured patients of hyperthyroidism by resection of splanchnic nerves, indicating that the sympathetic is to blame for inbalance or that the sympathetic is a chain in series in the inbalance.

The x-ray therapists in the past few years have applied their efforts to these physiological studies and have obtained some striking and very encouraging results. The methods of administration of treatment and place of attack are still matters of personal opinion and experimentation, as it necessarily would be in so complicated a field. Some investigators have cured hyperthyroidism by irradiation of the pituitary, others direct their rays over the splanchnics and adrenals, but the majority still approach the problem as the surgeon does by direct irradiation of the thyroid.

The following are some of the disturbances ameliorated or cured by x-ray therapy:

1. Hyperthyroidism as mentioned above. Recommended in all cases where surgery is contra-indicated or refused and in recurrences.
2. Menstrual disorders—Menorrhagia,

Menorrhagia. Ovulation controls menstruation. Moderate dosage over the radio-sensitive ovaries causes a decrease in the function and therefore a decrease or temporary cessation of menstrual flow. Large dose over the ovaries can cause permanent amenorrhea. Radium when inserted into the uterus to control abnormal uterine bleeding, acts directly on the endometrium and uterine wall and indirectly on the ovaries. In menstrual irregularities due to small fibroids, the theory of action of x-ray is its effect on ovaries rather than on hyperplastic fibrous tissue; an artificial menopause is obtained. Let me emphasize that it is perfectly safe to give a moderate dose of x-ray to control abnormal functional bleeding in young women.

3. Hypertension. That this disturbance is due to sympathetic or endocrine dys- or hyperfunction setting up abnormal arterial tension is a generally accepted fact. Dr. Crile has cured many hypertensive cases by resection of the splanchnic nerves. The roentgen therapist has approached the problem on similar bases and has thus far obtained very excellent results. Dr. James Hutton of Chicago University reported in the *Radiology Journal*, March, 1935, his results in one hundred twenty-five cases. He obtained a definite improvement with marked drop in blood pressure in ninety-five cases. In other cases he obtained relief of symptoms. He irradiated the pituitary, adrenals and splanchnic area. At Mankato Clinic, I treated four patients with good results. In one of the Sisters in the Mankato Hospital I obtained a persistent drop in blood pressure from 220/120 to 160/80 in a few months.
4. The roentgen therapist has followed the surgeon in another important group of diseases, i. e., vascular disturbances, Raynaud's disease, Buerger's disease and gangrene of the extremities where the pathology is due to arterial spasm. The surgeon has obtained good results by periarterial

sympathectomy. The x-ray therapist has produced similar results in many cases by irradiation of suprarenal area or sympathetics at the involved cord segment. The method here is innocuous, and entirely safe. It is worth while to try x-ray first in these lesions; you can always fall back on surgery, if necessary.

5. In the neuralgias, x-ray has shown to have analgesic effect. Drs. Shuller and Kuyrkendall referred an interesting case to me the other day—an old farmer with supra-orbital herpes zoster and most agonizing pain due to trigeminal neuralgia. X-ray irradiation over peripheral nerves and over gasserian ganglion produced prompt relief of pain. The literature contains numerous cases of similar results.

Numerous other disturbances due to sympathetic dysfunction are being treated by x-ray, as angina, bronchial asthma, etc., and the scope is continually being increased.

SKIN

Twenty years ago, Dr. Pusey stated that x-ray is the most powerful aid available to the dermatologist. This statement is even more true today. Often times the dermatologist is accused of hiding his lack of knowledge of the skin lesion by recommending x-ray. But the etiology of many of our skin lesions are unknown. If x-ray shortens the course and relieves symptoms of these so-called "self-limited" diseases, then why not use it more? The indications of x-ray in dermatology are based on the following proprieties:

1. Its effect on inflammations and neoplasms have been mentioned.
2. In functional or productive over-activity of sebaceous and sweat glands—acne, hyperidrosis.
3. Inhibitory effect on hyperplasias and hypertrophies—lichenification, warts, keloid.
4. Ability to change the metabolism of regional cells or produce an environment that is less favorable for growth and reproduction of bacteria and fungus as in ringworm, skin tuberculosis, etc.

5. Epilation of hair; temporary epilation by a suberythema dose used for tinea barbae, tinea capitis, favus.
6. Relief of puritis, including functional puritis of vulva and ani.

* * *

ROENTGEN DIAGNOSIS

X-ray in diagnosis has made amazing strides in the last ten or fifteen years, a period that can be called the "injection era" of diagnosis or the era of contrast media. Almost every organ in the body can be visualized by x-ray today. Iodide salts or compounds are used chiefly for contrast, as lipiodol, sodium iodide, tetreiodophenophathalein used in gall bladder work, and various organic iodide preparations used for kidney visualization as iopax, skioldan and hippuran. Barium sulphate is used to visualize the G. I. tract.

The following are a few organs visualized by x-ray with the aid of a contrast media:

1. Kidney:
 - a. Intravenous urography—determines the function of both the kidneys, anomalies, calculi in the ureters, and occasionally in the kidneys, constricted or distorted ureters, hydronephrosis, large tumors and ptosis.
 - b. Retrograde urography—this is definitely more accurate than intravenous urography. Small tumors, localized tuberculosis, first and second degree of hydronephrosis, etc., can be diagnosed only by this method.
2. Cholecystography. The oral method has supplanted the intravenous administration of the dye in most clinics and hospitals. Drs. Kirklin, Stewart, and others, have shown that cholecystography is accurate in ninety per cent of all their cases.
3. Chest work. Lipiodol is the agent used:
 - a. In visualizing the location and extent of bronchiectasis, tuberculous or inflammatory.
 - b. To locate lung abscess.

- c. In the diagnosis of bronchial tumors.
- d. In locating the origin of a sinus or fistulous tract.

The injection of air in the pleural cavity is often of great diagnostic aid in determining whether an opacity is due to thickened pleura or fluid, or whether an opaque mass within the lung is a growth of the pleura.

4. Gynecology. Lipiodol when injected into the uterus enables us to obtain a film that gives accurate information of the pathology, as uterine tumors, distorted tubes, and any anatomical peculiarities of the uterus and tubes. It is used in preference to the Rubin test by many physicians for sterility studies, for x-ray reveals whether the tubes are open or closed or pathological. Salpingography is no more dangerous than the Rubin inflation test. Several thousand cases have already been reported in literature without any sequella to the patient. An extension of lipiodol into the vessels of the broad ligament is a very rare complication.
5. Brain pathology. Marked advance in brain surgery and neurology has resulted due to accurate localization of brain tumors by injection of air into the spinal canal and ventricles; the procedure is called Encephalography and Ventriculography.
6. Injection of air into the abdomen, called pneumoperitoneum, has been of value in differentiating liver and spleen from abdominal tumor.
7. You are all familiar with the high degree of accuracy by competent radiologists in the diagnosis of lesions of the esophagus, stomach and intestines. Barium meal studies are likewise diagnostic, indirectly, in tumors outside the intestines when they cause an extrinsic defect or displacement of the intestines or stomach, as pancreatic cysts, enlarged liver, retro-peritoneal tumors. An esophageal study is often indi-

cated in a correct diagnosis of mediastinal pathology. It should always be done during the fluoroscopic examination of every abnormal heart. Posterior enlargement of the left auricle, for example, can be diagnosed often only by this means.

I'd like to mention just a word before closing of the value of x-ray in the diagnosis of the surgical abdomen. Many a surgeon has operated for appendicitis only to find a renal calculus later on. Many surgeons have delayed in operating a supposedly subacute appendix only to find at operation a strangulated bowel. While you are preparing for an operation or trying to make a definite diagnosis, take the trouble to obtain a flat plate of the abdomen. No preparation is necessary. Intestinal obstruction in most cases can be diagnosed before clinical symptoms become definite. A film is taken in prone and vertical positions to visualize the dilation of the proximal bowel and fluid levels. In perforation of a viscus, a film is taken in the vertical position; the escaped air collects under the diaphragm. A simple flat plate can demonstrate opaque renal and biliary calculi, often reveals a perinephritic abscess, subphrenic abscess, tuberculous kidney when calcified, etc. Further studies of the suspected pathological organ is continued, if necessary, by the proper use of contrast medium as already indicated.

I have crowded a large number of facts in this small paper. I do hope I have made the rational of x-ray therapy more clear to you, and have shown why and when it is indicated. I hope you will keep in mind the use of contrast media as an aid in obtaining a roentgen demonstration of the pathology in the organ involved.

Note: An excellent paper on the rational of radiotherapy has since been published by Dr. Arthur U. Desjardins of Mayo Clinic in the December 21 and December 28, 1935, issues of the Journal of A. M. A. Dr. Desjardins discusses in more detail the value of radiotherapy in the specific tumors of the body, inflammatory conditions, leukemia, etc.

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SILICOSIS*

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The Committee on Standards of the American Health Association has adopted the following definition of silicosis: "Silicosis is a disease due to breathing silica (SiO_2), characterized anatomically by generalized fibrotic changes, and the development of miliary nodulation in both lungs and clinically by shortness of breath, decreased chest expansion, lessened capacity for work, absence of fever and increased susceptibility to tuberculosis."

Silicosis has been intensely studied since it was isolated from other diseases caused by dust. These studies have shown that silicosis may be well advanced without seriously impairing the general health, providing there are no complications. However, uncomplicated silicosis may produce death. The majority of the advanced cases either develop tuberculosis or some acute infection of the lungs, and the case terminates fatally. Not only will silica produce a specific condition in the lungs when inhaled in sufficient quantities, but some of the silicates such as asbestos, as well as coal and iron dust will produce a very similar condition. But, as a rule, those afflicted are not so prone to develop tuberculosis.

Much work is being done on a group of diseases known as pneumoconiosis. This is a broad term, which includes all forms of dusty lung disease. Time will not permit a discussion of these various diseases but the slides which will be shown at the close of this paper will show several of these conditions. It is generally agreed now, that the disease once known as miners' phthisis, potters' rot, grinders' rot and masons' rot, arises from the inhalation of silica dust. Silicosis may be found where ever there is a silica dust hazard and this includes a goodly number of our present industries.

The fact that tuberculosis, as well as

other infections are prone to develop in lungs affected with silicosis, would seem to indicate that silica sets up a chemical reaction in the lungs, as well as a mechanical irritation. There are other complications of silicosis which occur frequently and deserve special mention and that is silicotics are very apt to develop cardiovascular and cardio-renal diseases as well as degenerate changes in other organs of the body. This would seem to support the theory that silica is a slow acting chemical poison, which when inhaled into the lungs, produces a very deleterious effect on the entire system. It has been shown that not only tuberculosis is prone to develop in a silicotic lung, but that tuberculosis will precipitate an otherwise "latent" silicosis.

The rapidity of development of silicosis depends on several factors; the number of dust particles inhaled, the number of hours exposed per day and the number of hours per week, whether or not the individual is a mouth breather and finally on the susceptibility of the individual. The finer the dust and the more pure silica it contains, the more harmful it is. At least six million particles per cubic foot of air is necessary to develop silicosis, even in this amount the dust must be practically pure silica and inhaled over a long period of time. The particles which are most harmful are from two to five microns in diameter; they are invisible to the naked eye.

For convenience of description and possible compensation purposes, the disease has been arbitrarily divided into three stages: first, second and third stage. (In Canada they are designated anti-primary, primary and secondary).

Ten states have now placed silicosis on the list of compensable occupational diseases. As yet it is not compensable in Oklahoma. Canada, Great Britain, Australia and Germany also place silicosis on the compensable list.

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Under normal conditions the lungs are fairly well protected from an ordinary amount of dust. This protection is afforded by the ciliated epithelium, phagocytes, mucous secretions and the cells themselves. However, in persons who work in a very dusty atmosphere these protective devices are insufficient and deposition of particles of dust occur. As a result destruction of the epithelium takes place and the subsequent desquamation permits the entrance of the particles into the lymph stream where they are carried to all parts of the lungs, and produce definite pathologic changes. A person who works for any length of time at a dusty trade will develop some fibrosis of the lungs, while it generally takes years to develop silicosis. The shortest period of time I have been able to find on any given fatal case was eighteen months, and this short time only when the exposure was very heavy. The average time required to develop silicosis is about ten years. However, after the process has once begun the development continues long after the exposure has ceased.

As has been stated the disease is divided into three stages. We will discuss briefly the different symptoms and clinical findings in each stage, and attempt to show the difference on the slides.

First Stage: The symptoms and signs of first stage silicosis are very few and at most, very indefinite. The patient appears quite well. On close examination together with a known history of exposure to silica dust, it is possible to elicit a few facts, such as dyspnea on exertion, slight decrease in chest expansion, frequent colds and an unproductive cough. The x-ray findings in this stage are generalized arborization throughout both lungs, with small discrete mottlings. Without an x-ray, I am of the opinion that first stage silicosis can not be diagnosed, for the reason that the physical findings are so indefinite and that the patient shows such little effect of the disease.

Second Stage: The symptoms, signs and physical findings in the second stage are much more pronounced than in the first stage. The outstanding findings are about as follows: Dyspnea on exertion, decreased chest expansion, dry cough, bronchial-vesicular breathing, pain in chest,

absence of fever and occasionally loss of weight. An important symptom, and one that should always be looked for, is inability to hold breath the average length of time. Vomiting is also a frequent symptom. The x-ray shows generalized mottling or beading throughout both lungs. The shadow of each bead is well defined, occasionally there may be some larger opacities due to an aggregation of beads or pleural thickening. The hili shadows are very dense as a rule.

Third Stage: All the symptoms of the second stage silicosis are present and very much aggravated. There may or may not be a loss of weight, persistent cough and almost a total incapacity for work. The patient becomes exhausted on slight exertion. The pulse is generally accelerated and the heart dilated. The breath holding time is very short, about fifteen to twenty seconds as a rule. They have very little chest expansion, usually one to one and a half inches. The patient has very much the appearance of an advanced cardiac case. Hemorrhages are common, as is vomiting. The x-ray findings are essentially the same as in the second stage, except the so-called beads are very much larger and seem to run together, or become conglomerate to give the appearance of a dense fibrosis throughout the lungs.

Treatment: The best treatment for silicosis is prevention. The best prevention is to control the dust hazard. This, however, is not always possible, nor practical, therefore, some form of mechanical device should be worn. There are a number of such devices on the market today. The Wilson Respirator is probably the best type we have at present.

Men working in dusty places should have an x-ray of their chest made often, at least once a year. When it is discovered that a worker is developing silicosis his occupation should be changed to one where there is no dust hazard. His general health should be looked after very carefully. He should avoid colds by every known means. The cardio-vascular system, as well as the other organs of the body, should receive careful attention. He certainly should avoid coming in contact with tuberculosis. Personally, I doubt if internal medication is of much value in a

case of silicosis. The expectorants could be tried, perhaps.

SUMMARY

1. Silicosis is a widespread disease and is likely to appear in any industry using materials which contain as much as thirty per cent silica.
2. Individuals working in dusty places should have an x-ray of the chest at least once a year.
3. Silicotics are prone to develop tuberculosis.
4. It takes from two to ten years of rather intense exposure to develop silicosis.
5. The diagnosis of silicosis should be made only after a careful physical examination together with an x-ray of the chest and finally one must know that there has been a prolonged exposure to silica dust.
6. The best treatment of silicosis is prevention by controlling the dust hazard, or the wearing of respirators.

* * *

DISCUSSION

Dr. Fred Clark: In 1924 in the service of the Veteran's Bureau the U. S. Health Department sent down to El Reno a class who had been delegated to make surveys in the Veteran work. We were shocked at something like two or three hundred sets of cases he had. He spent days going over those. From then on those in the Veteran's Bureau service were very keen to be looking for silicosis. As Doctor Bollinger has said, in the first stages you do not think it amounts to much, but after a few years when the men began to develop tuberculosis they could not see why more should not develop it. One form is cold, another form we found quite frequently in men who work in Ohio. I am convinced in years to come we will see more of it. It is something we will have to keep advised on.

I enjoyed the paper very much and also suggest that prevention is practically the only thing there is in treatment. If it is gotten early we may be able to accomplish something. The subject of silicosis is becoming more important and we are

reading more about it each day. The diagnosis is very difficult. There is no temperature. It is a disease simulating tuberculosis without temperature. I had a boy not long ago before the Federal Commission who got into the dust and worked for fifteen or twenty minutes. He got the job of his own accord and later on in a few days he took cold. The organization was then cut. They did not need him. He came to Oklahoma City. He claimed he got silicosis in thirty minutes exposure to dust. We know it is impossible. It takes months to develop silicosis. Finally he got \$700.

The Treatment of Angina Pectoris

The treatment of angina pectoris has been very ably discussed by Dr. N. C. Gilbert of St. Luke's Hospital, Chicago, in the Medical Clinics of North America for January, 1936.

Gilbert believes that an attack of angina pectoris occurs whenever the metabolic needs of the heart muscle are increased out of proportion to the blood supply available at the moment. Such attacks may be brought on by exertion, indigestion and emotional upsets; attacks may also occur in patients with pernicious anemia due to an insufficient supply of oxygen for the heart muscle or in patients with diabetes following temporary hypoglycemia after insulin; in some patients the attacks can only be ascribed to an over-labile autonomic nervous system. A great deal of the patient's future depends on what the physician says. The physician should try to gain a common ground of understanding with the patient, to encourage him and at the same time evaluate the factors which predispose to the attack and direct the patient as to how he attacks can best be avoided.

The attacks themselves are best relieved by amyl nitrite or nitroglycerine. Between attacks, most cases can be materially helped by medication with the purine base diuretics (theobromine and theophylline salts). In order not to discourage the patient with untoward effects treatment is started with theobromine-calcium salicylate (Theocalcin) which only very rarely causes distress. It is assumed that tolerance to its purines is acquired and Theocalcin medication is alternated with theophylline ethylenediamine or theophylline-calcium salicylate (Phyllicin), which is quite as effective clinically. Theocalcin is given in 7½-grain tablets, one or two at a time and Phyllicin in 4-grain tablets. All the purine salts are best taken during the meal. Rest from medication may be allowed for a few days each week.

Some patients have received treatment with the purine salts, especially those above mentioned, for as long as eleven years without having to discontinue medication on account of intolerance. Phenobarbital, when necessary, is used separately so that the dosage can be properly varied; a sedative effect without drowsiness is the aim. In general, digitalis is best not used, except where there are definite indications, since it may precipitate an attack, as it reduces coronary flow. As far as surgical methods for the prevention and treatment of anginal pain are concerned, they are not to be used indiscriminately and cases must be chosen with great care.

The Value of Pre-Natal and Post-Natal Care*

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It is far more spectacular for the writer and interesting for the reader for one to select a subject which has been an object of recent valuable research work, which has resulted in possibly a specific drug remedy, or a vaccine or serum prevention and cure, rather than discuss the value of pre- and post-natal care. But so long as America shamefully is among the leaders of all nations, if not technically heading the list, in maternal mortality it is due time the profession pause and seriously consider at least one of the predisposing causes for this universally accepted fact that: "Too many mothers die in and from childbirth."

The history of pre-natal care is very interesting and has long been recognized and practiced but always with one intention; that being preventive. All the processes ever practically applied were, and are done to protect and maintain the present health of the patient—in hopes that such treatment will be sufficient in avoiding and preventing the possibly more serious complications of pregnancy. The first laboratory test used, that of urinary examination, for the purpose of anticipating kidney deficiency and the likelihood of eclampsia, was so soundly justified and clinically important, that it has been handed down for generations and is today almost monotonously routine. In this we see the first real functional test, that of kidney function, accompanied by pregnancy, and as time has passed many other vital and important laboratory and functional tests have been perfected, such as blood counts, blood chemistry, Wassermanns, metabolisms, and each having an individual functional significance. For years the pelvimeter with pelvic measurements has been in use, again only as a precautionary mechanical measure, this to avoid attempting impossible deliveries in contracted or deformed pelvi. The x-ray is

more recent; so rapidly and very wisely is displacing the pelvimeter. The findings by x-ray (using a standard technique), being far more accurate should, where at all possible, be regular routine, especially with Primiparas. It then so appears, we have two objectives in pre-natal care; one is mechanical, the other functional. The mechanical abnormalities are more easily and accurately determined, usually do not complicate pregnancy until late or actual delivery, and are less excusable for error because of this fact, than are the functional types. It is the avoiding of organic complications of pregnancy, as well as developed increased dexterity of action in deliveries, that will certainly indirectly decrease our "maternal mortality." Our modern method of individualizing our patients is progressive and efficient, for to be a good obstetrician you must be a capable diagnostician and internist, fully aware of the normal expected changes of pregnancy. It is the variation from the normal that diversifies the complications of pre-natal care. Our ability to justly evaluate physical findings; to properly weigh physiological symptoms; or to give due credit to the patient's common complaints, with relation to their functional capacity toward disease, is the basic judgment in obstetrics we all seek and too seldom realize. The reason of failure being "*the lack of thorough physical examination early in pregnancy.*" Too frequently we do not have the opportunity of early examinations, but this is partially our own responsibility, in that the importance of such care is not stressed sufficiently in the profession, nor to the public. It is true we are gaining; in the past twenty years, pre-natal care and conservative obstetrics have cut the maternal mortality in half. But we can do that again and still not have cause to be boastful. There are few subjects so dry as statistics but for the year of 1934 only "*one per cent of the women in America who died in childbirth*

*Read before the Section on Obstetrics and Pediatrics, Annual Meeting, Oklahoma City, May 14, 1935.

had received pre-natal care up to standard." In other words, ninety-nine out of every hundred who died did not know or were not convinced of the value of pre-natal care. This is a challenge to the medical profession. We must educate the public, and reprimand the profession for not doing it.

Pregnancy has been defined as a normal process and terminated by the physiological function of labor. This may be true, but there are very few diseases your patients may have that will exact more of a profound functional test than will pregnancy. If free from "all organic disease, pregnancy will be healthy and happy, but often the extra demands made by pregnancy on a latent or hidden organic disorder, lower the threshold of resistance to disease, and the pre-existing pathologic processes increase in severity and extent. For example, the nephritics, the tuberculars, the anemias, hypertension, diabetics, and cardiacs fall in the major class, and all are aggravated by pregnancy, either early or late, depending on the extent of pathology at onset. Lues being a specific entity, falls also in these major diseases. Volumes have been written on the treatment of such cases, but with present day advantages of laboratories, x-rays, blood counts, blood chemistries, and metabolisms, we should make sufficient diagnosis (if given the chance) and prognosis not only as to life but good health after her labor. Too many of our serious complications of delivery date back to the ill-fruits and errors in judgment in our pre-natal or more often lack of pre-natal care. Every year in America over one hundred thousand women suffer from "toxemia of pregnancy," but not all pass on to the most dreaded complication of all, that of eclampsia, being aborted by early treatment and rigid pre-natal care. If eclampsia, a condition of a "series of complications" with no one known specific etiology, can be aborted and prevented (if treated in time), then other less serious pathologic processes should be recognized and can be checked and benefited if properly diagnosed and intelligently treated. The sooner the obstetrician follows the orthopedic surgeon in thinking in terms of permanent disability of pregnancy and permanent good health afterwards, the

more efficient pre-natal care we will have and a further reduction in "maternal mortality."

Now let's consider post-natal care.

The most neglected field in all medicine is that of post-natal care. The show is too frequently over ten days after delivery. If the mother lives and the baby cries, we hurry to the next case. If a repair to the birth canal has been necessary, we accept the nurse's opinion and judgment as to the condition of the sutures and the wound repair. The small or large lacerations of the cervix are often left for nature to repair, with the aid of "douches" after the flow stops. The position and size of the uterus are hastily dismissed as "expected weaknesses" which will improve, and return to normal, as she regains her strength. All these are assured and with a partial to complete lack of the necessary information: (1) as to her proper needed exercises; (2) the value of local treatments of tampons, or a properly fitting pessary; (3) or the adequate and necessary cauterization of the cervix to hasten its cure and lessen the frequency of a malignancy later in life. How many potential malignancies of the cervix have you seen, due to the primary lacerations of cervix and secondary erosions dating back to her first labor, and from two to fifteen years duration? Plenty, I am sure. I am satisfied it is the neglected cervical laceration followed by endocervicitis complicated by an endometritis and a low-grade infection of pelvic organs, that is the etiology of most of our so-called unpreventable complications of pregnancy such as accidental miscarriages, ectopic pregnancies, premature separation of placenta, and also possibly placenta praevia. The position and size of the uterus, subinvolved and retroverted, certainly are causative factors in these same accidents, but if treatment by tampons, or properly fitting pessaries, and aided by intelligent and routine exercises, started in time, say three to five weeks following labor, you can (1) correct the uterine position, (2) prevent a pelvic congestion, (3) abort broad ligament varicosities, with a resulting ovarian dysfunction, and a subsequent fat or nervous patient six months to one year later.

In summary, let me remind you in short

the value of pre-natal care depends on the following:

First: A rigid, thorough physical examination as early in pregnancy as is possible with regular pre-natal visits every three weeks for the first seven months and every two weeks for the last two months, always attempting to find the latent and hidden pathology if present.

Second: Make a total charge for the pre-natal, the delivery, and the post-natal care. I find if they pay for this service they will return for the necessary treatment; otherwise not.

Third: Make post-natal care as rigid

as routine and as thorough an examination as pre-natal, clearing up all the handicaps that actual labor and pregnancy have caused and an examination three months after dismissal with no charge.

Fourth: Think what you would want done by the profession if you were to exchange places with the poor man out of work and with a large family and a pregnant wife.

Fifth: Last, let us modify and help change the known axiom—"that too many women die of childbirth"—to one equally as important a fact: "That too few women have necessary pre-natal care.

TONSILLECTOMY*

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STILLWATER

In the beginning I want it understood that this paper is not an attack upon the most popular and the most common of all operations, but merely an attempt to recall its true importance, lest, in its comparative simplicity and frequency, we forget some of the ill effects that follow a slight in the preparation for the operation, the technique of operation, or the post-operative care of the patient.

Every physician engaged in the practice of medicine or surgery, inclusive even of the very highly specialized fields, should be well versed regarding why tonsils and adenoids should be removed. Also, every physician or surgeon who removes tonsils and adenoids should have a definite knowledge and training regarding the operation and its many associated factors, such as the time for operation, the preparation for operation, the technique of operation, the type of anesthetic, the control of hemorrhage, etc.

Upon the knowledge and ability of the operator depends the post-operative condition of the patient, the post-operative condition of his throat and naso-pharynx,

and the final end-result of the operation. However, too often something goes amiss, and we are confronted with conditions post-operatively that we should, or would, like to make some attempt to correct, or, at the very least, we would like to forget.

These conditions do occur and they remain as monuments to be observed, and frequently criticized, by other physicians. The usual observer and critic is the general practitioner, or family physician, to whom the individual ordinarily turns for medical advice, or in time of illness.

As a representative of this group, the general practitioner's, I have attempted to make an outline or list of the more common faults that I have observed in my patients who have had their tonsils removed. These faults are of two kinds primarily: First, those faults of which the patients themselves complain. Second, those faults observed in the throats upon examination.

Without any comment upon them individually, I have listed them as follows, in the first group—that is the faults of which the patients complain:

1. A continued or increased susceptibil-

*Read before the Eye, Ear, Nose and Throat Section, Annual Meeting, Oklahoma State Medical Association, Oklahoma City, May, 1935.

- ity to frequent colds and sore throats.
2. A continued or increased susceptibility to nasal catarrh and otitis media.
 3. A continued or increased susceptibility to laryngitis.
 4. Increased local pain incident to acute infections of the tissue in the operated area.
 5. A lack of relief from evidence of focal infection.
 6. A continued hypertrophy of the cervical lymph glands.
 7. A partial loss of, or change in, the voice.
 8. An immobility of, or sense of tightening at the base of the tongue.
 9. An inability to eat or drink without food entering the post-nasal spaces.

In the second group, that is, those faults that are observed upon examination, I have listed:

1. Remaining tonsil tissue.
2. Remaining and hypertrophied lymphoid tissue in the lower pole of tonsil fossa.
3. Scarring and contracture in the tonsil fossa and surrounding tissue.
4. Adhesion between lower pole of tonsil fossa and base of the tongue.
5. A loss of the uvula or a portion of the soft palate.
6. A loss of a portion of one or both anterior pillars.
7. A loss of a portion of one or both posterior pillars.
8. An increased difficulty in the diagnosis of diphtheria and scarlet fever from a clinical standpoint.

Having listed these faults, I would like also to give you a list of suggestions that I believe would do a great deal in preventing their occurrence:

1. A careful examination to determine the pre-operative general condition of the patient, and thereby to remedy, prior to operation, any factor that might be likely to result in complications.

2. Care should be exercised in the diagnosis of chronic infections of the oral cavity and the tonsil tissue to avoid operating at the time of a sub-acute case of Vincent's angina.
3. Before operating, I think a definite space of time should elapse after an acute infection of the nasal cavity, oral cavity, or the naso-pharyngeal region.
4. The time of year does not have any particular significance in the adult. In children, I believe that the ideal season for the operation is the late spring, or summer; because this gives the operative field a greater length of time to properly heal without being disturbed by exposure to changeable weather conditions and frequent colds incident to these weather changes. This applies particularly to end-results of the removal of the adenoids.
5. There should be a careful study of the field of operation and a pre-operative planning of each individual operation.
6. In the majority of adults, I believe that it is not necessary to remove all of the infratonsillar lymphatic nodules, particularly of singers and public speakers, but I do feel it should be carefully done in all children.
7. Every operator should have knowledge of, and an ability to use, more than one method of operative technique, for certainly, there is no one method that is ideal for every condition encountered even in this simple operation.
8. The post-operative care should consist of a routine examination and care at regular intervals over a period of at least two weeks, or until the throat is entirely healed.

In making out this outline I have dealt entirely with the ill results of a tonsillectomy that are delayed in their appearance, and I feel that I have perhaps side-stepped the more singular and the more dangerous complications of this operation. I am referring to the complications that occur during or immediately following the operation.

You are all familiar with them, and, by turning to most any textbook, you will find them rather thoroughly discussed. However, they are: (1) hemorrhage, (2) shock, (3) post-operative pain, (4) ear ache and otitis media, (5) nasal catarrh, (6) septic sore throat, (7) deep abscesses of the neck, (8) pleurisy, (9) pneumonia, (10) edema of uvula, (11) convulsions, (12) general debility, (13) status lymphaticus.

From the foregoing comments it might appear that I have attempted to picture a terrible ordeal, that is, pictured the common and simple tonsillectomy as a wolf in sheep's clothing. But, as I have already stated, I am merely attempting to remind you that we are prone to grow careless in what we consider a rather common-place and simple procedure.

In conclusion let me state that I am thoroughly confident that the many ills of this operation can be avoided by careful and premeditated diligence on the part of our trained operators, and by keeping in mind that the hazards of a tonsillectomy are not worth the risk unless good surgery is practiced, and ideal end-results obtained.

The Lymphomatoid Diseases (So-Called Lymphoblastomas)

E. B. Krumbhaar, Philadelphia (Journal A. M. A., January 25, 1936), avers that with the inauguration of modern hematology by Virchow and Ehrlich, sound criteria were accumulated for the segregation of typical cases of the various lukemias; the picture of lymphosarcoma was definitely outlined by Kundrat in 1893, while for Hodgkin's disease the establishment of a special pathologic histology by Sternberg and Reed about the turn of the century gave an adequate diagnostic basis for most cases of this disease, when microscopic tissue examination was possible. A number of other more or less obscure conditions, such as pseudo-leukemia, leukosarcoma, granuloma fungoides, Mikulicz's syndrome, the chloromas, and more recently the reticuloses and giant lymph follicle hyperplasia, present either such obvious relationships to the group or such difficulties of differential diagnosis that they may well be grouped together under one heading. For this heterogeneous group, a noncommittal term "lymphomatoid diseases" is suggested instead of the scientifically inaccurate and progress-inhibiting designation of "lymphoblastoma," with its unjustifiable indication of neoplasm. It is further suggested that the latter term be reserved for the use for which it was coined, "a tumor derived from the lymphoblast," and not distorted out of sense to supply a clinical need. In spite of, or rather in view of, the overlapping and often baffling clinical pictures encountered, the classification and the individual diagnoses as far as possible should be on a pathologic basis. It is more de-

sirable to leave the diagnosis of cases in which this is impossible as tentative or unmade than to make unwarranted groupings under a single head for the sake of giving a label to a greater number of individual cases. An analysis of one hundred fifty cases of these lymphomatoid and related diseases in the autopsy records of the University and Philadelphia General hospitals has brought out various items of etiologic and pathologic interest. Useful light on the essential nature of the diseases, however, has not been forthcoming. Phagocytosis of tumor cells may occasionally be so marked as to require consideration as a factor in tumor resistance. The lymphomatoid diseases are practically all alike in having a fatal prognosis, though the duration may extend from a few days to many years. With few exceptions they are peculiarly susceptible to and improved by radiation treatment. The relative resistance of the reticuloses to radiation may prove useful in segregating this group.

Traumatic Flail Elbow

Joseph M. Murray, Ottawa, Ont. (Journal A. M. A., January 25, 1936), points out that it has been stated that bones are useful in the measure in which they separate the origin of muscles from their insertions. In flail elbows the bones do not perform this service adequately. They slide by one another or override, owing to their altered shape and diminished size. In order to give a broad, firm joint surface of contact for resistive purposes and insuring lateral stability, both of which are lacking because of the narrowed and pointed lower end of the humerus, he operated on a case of flail elbow four years from the date of accident. Through a midline posterior vertical incision, the ulna nerve was dissected free from the scar tissue and placed to the inner side. The triceps was freed from its attachment to the fibrous tissue covering the lower end of the humerus. The lower end of the humerus was sawed off square and then with a chisel the lower end of the shaft was split vertically into lateral halves and forced apart. The free piece of bone, which was previously the pointed lower extremity, was placed in the crevice, which was widened sufficiently to give a width to the lower end of the humerus equal to the normal. Drill holes were placed in the upper end of the ulna and along the sides of the ulna in its upper third, extending to the medullary cavity. With a chisel, a sliding graft (as described by Albee) was made, bordered on each side by the two rows of drill holes. Beginning below about the middle of the ulna, it was pushed upward and behind the now broadened end of the humerus and was held in its bed by kangaroo tendon sutures, passed through the lateral rows of drill holes. The triceps was attached to the upper end of the graft and the skin was closed with silk worm gut. A cast was applied from the palm to the axilla, with the elbow at an angle of 145 degrees. This cast was changed and the stitches were removed in four weeks. A second cast was applied with the elbow at an angle of 100 degrees and worn for four weeks longer. The patient was then allowed to use the joint. The elbow has remained stable and painless since, and the range of active motion is between an angle of 85 and 175 degrees and is slowly increasing. At examination, one year after the operation, the flexor and extensor muscles were able to function normally and the patient could perform the usual movements with ease and perfect coordination. He is able to lift a load and control it, during the different movements, practically as well as before the accident.

THE JOURNAL

OF THE

Oklahoma State Medical Association

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No. 3

DR. L. S. WILLOUR.....Editor-in-Chief
McAlester, Oklahoma

DR. T. H. MCCARLEY.....Associate Editor
McAlester, Oklahoma

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Reprints of original articles will be supplied at actual cost provided requests for them is attached to manuscripts or made in sufficient time before publication.

Articles sent this Journal for publication and all those read at the annual meetings of the State Association are the sole property of this Journal. The Journal relies on each individual contributor's strict adherence to this well-known rule of medical journalism. In the event an article sent this Journal for publication is published before appearance in the Journal the manuscript will be returned to the writer.

Failure to receive The Journal should call for immediate notification of the editor, 203 Ainsworth Building, McAlester, Oklahoma.

Local news of possible interest to the medical profession, notes on removals, changes of addresses, births, deaths and weddings will be gratefully received.

Advertising of articles, drugs or compounds unapproved by the Council on Pharmacy of the A. M. A., will not be accepted.

Advertising rates will be supplied on application.

It is suggested that wherever possible members of the State Association should patronize our advertisers in preference to others as a matter of fair reciprocity.

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EDITORIAL

ANNUAL MEETING

Your attention is called to the program of the Annual Meeting appearing in this number of THE JOURNAL and it will be evident to you that you cannot afford to miss so interesting and instructive a meeting.

Our Guest Speakers are men of international reputation and there never has been presented to the State Association more interesting material in the respective Sections.

This is your opportunity to be entertained and edified.



DR. E. T. OLSEN

Dean Robt. U. Patterson has been fortunate in securing the services of Dr. E. T. Olsen as Superintendent of University Hospital and the Oklahoma Hospital for Crippled Children. A graduate of the Medical School of Columbia University, he comes to our institution from Detroit where he was Superintendent of the Receiving Hospital.

We want Dr. Olsen to feel confident of the undivided support of the organized medical profession of Oklahoma and we predict for him a successful administration.

—O—

Editorial Notes—Personal and General

DR. M. D. CARNELL, Okmulgee, has been appointed county superintendent of health to succeed Dr. J. C. Rembert, who died February 12th.

DR. RICHARD B. FORD, Holdenville, is doing post-graduate work in Europe. While gone he will study in Berlin and Vienna.

DR. MORRIS SMITH, Guymon, has been appointed superintendent of health of Texas county.

DR. HERVEY A. FOERSTER, Ada, is doing post-graduate work in dermatology and syphilology at Columbia University.

OKLAHOMA INTERNIST'S ASSOCIATION will meet at the Youngblood Hotel, Enid, Monday, April 6th at 3:00 p. m. A dinner will be served at 6:00

p. m. at the same hotel. Everyone interested in Internal Medicine is invited to be present.

Many of the Oklahoma Fellows of the American College of Surgeons attended the sectional meeting held in Dallas, March 4, 5, 6.

News of the County Medical Societies

CADDO-GRADY County Medical Society met in joint meeting at Anadarko, February 14th, and the following program was presented: "Coronary Thrombosis"—B. H. Cooley, Norman; "Cancer of the Face and Lip—Diagnosis and Treatment"—E. S. Lain, Oklahoma City. "Cancer of the Uterus"—Wendell Long, Oklahoma City.

OKMULGEE-OKFUSKEE counties met at the Belmont hotel, Okmulgee, for dinner on February 17th, 1936. Resolutions upon the death of D. W. M. Cott and Dr. J. C. Rembert were read and approved. (They appear in this issue). A scientific program consisted of the Eli Lilly movie films on "Ergotrate" and "Surgical Tuberculosis." The speakers were Dr. L. J. Moorman and Dr. Horace Reed, both of Oklahoma City, who presented a symposium on "Surgery in Pulmonary Tuberculosis."

Radiologic Review's Ninth Annual "Radium Number"

The March issue of the Radiologic Review and Mississippi Valley Medical Journal (Quincy, Ill.) is the ninth annual "Radium Number" of that publication. It is entirely devoted to radium, containing ten original articles, especially written for this issue by leading American Radium Therapists on various phases of radium therapy. There are contributions by Jones of Cleveland, Schreiner and Wehr of Buffalo, Soiland of Los Angeles, Murphy of Minneapolis, Fox of Dallas, Levin and Sittenfield of New York, Swanburg of Quincy, Simpson of Chicago, etc.

The issue includes three important contributions on gynecologic malignancy. Jones of the Cleveland Clinic, reviews six hundred ten cases of carcinoma of the cervix treated at that institution by radiation, concluding that radiation is the best treatment and that their five-year curability is 24.5 per cent. Schreiner and Wehr of the State Institute for the Study of Malignant Disease at Buffalo, N. Y., summarize the results of three thousand one hundred five gynecologic malignancies treated at their clinic and make a vigorous plea for additional education on the part of both the public and the profession that will lead to an earlier diagnosis being established. They state their "firm belief that fifty per cent of the mortality could be avoided if the diagnoses could be made earlier."

Swanberg summarizes his efforts to further simplify the application of heavily filtered radium from multiple centers (Paris Technic) in the treatment of uterine cervical cancer. He believes the simplest technic is the use of his "T" shaped adjustable uterine radium applicator that is easily assembled in accordance with the length of the uterine canal, and the introduction of bakelite capsules in the vaginal fornices as used at the Radium Institute of London. A statistical summary of the latest five-year studies (1925-29 series) at the University of Paris are given as proof of the unusual efficiency of this method of radiotherapy (four hundred sixty-four cases treated with a 35.6 per cent five-year curability).

Postgraduate Course—"Neuropsychiatry in General Practice"

Dr. Israel Wechsler of New York City and Dr. J. W. Kernohan of the Mayo Clinic will cooperate with members of the staff of the Menninger Clinic in a postgraduate course held at the Menninger Clinic, Topeka, Kansas, April 20-25, 1936. The subject of the course will be "Neuropsychiatry in General Practice," and will conform essentially to the outlines of the course given last year. Lectures, case studies, and seminars included in the five and a half day course will be expressly directed to the application of modern neuropsychiatric principles to cases which the general practitioner frequently see in this field. Enrollment in the course is limited to thirty.

WILLIAM MASON COTT

Dr. W. M. Cott died in the Okmulgee City Hospital Friday, February 7, 1936, or an illness lasting several months.

Dr. Cott was born in Saline County, Missouri sixty-six years ago. He received his preliminary education in his home county and the William Jewell College at Liberty, Missouri; and his medical diploma at the College of Physicians and Surgeons, St. Louis, Missouri.

He came to Okmulgee in April, 1900, thirty-six years ago, where he practiced until the time of death. He was an active member of the First Baptist Church where his funeral service was held under the direction of his pastor, the Rev. E. L. Watson, and Rev. E. A. Powell, pastor of the First Christian Church, assisted by the Masonic order of which he was a charter member.

Dr. Cott served his community well. He was a very efficient member of the Board of Education for fifteen years, during which time he earned the love and respect of the children. He was president of the Okmulgee County Medical Society for two terms, and a member of the High Twelve Club; a liberal donator to every worthy cause, having at an early date in Okmulgee's history contributed the ground on which the First Baptist Church was built.

He is survived by his wife and three children.

Your committee feels very deeply the loss of so close an associate in our profession. They suggest this simple resolution be placed in the records of the Okmulgee County Medical Society, and a copy sent to the family and one to the Journal of the Oklahoma State Medical Association for publication.

First, that his hearty cooperation, his kind and helpful words in time of need, the endless work he did for the people of this county whether remunerated or not, and his willingness to work on any medical committee the Society chose to put him on, has been an inspiration to his profession and is hereby commended as worthy of emulation.

Second, that our sympathy is hereby extended to the good wife and children.

Committee: S. B. Leslie, W. C. Mitchner, M. D. Cornell.

RESOLUTIONS

DOCTOR J. C. REMBERT

WHEREAS on February 12, 1936, death called our friend and fellow physician, Dr. John C. Rembert, after long suffering which he, true to the code of such noble men, hid from the world that his work of humanity might not be hindered, and

WHEREAS by the passing of this friend we of the medical profession, lay friends and chance acquaintances, realize that we have lost one who was ever zealous in ministering to the needs of the people of the district, one whose every thought was of service and protection to the health of the public, whose conduct was ever above reproach and whose observance of the physicians' code of ethics was ever meticulous, and

WHEREAS we full well realize that in his passing we have lost one man whose place never can be taken in our hearts nor in the ranks of those who carry on the battle against pain and suffering and ignorance,

THEREFORE BE IT RESOLVED that this body go on record as adopting this feeble writing as an earnest symbol of our everlasting regrets at the death of this man and of our loss and the loss of the general public.

Submitted by Resolutions Committee.

H. L. Rains, Chairman.
Charles S. Maben
J. A. McElroy.

ADOPTED by the Okmulgee County Medical Association this thirteen day of February, 1936, with instructions that the original copy shall go to Mrs. Rembert, the surviving wife of our deceased friend, and that a copy shall be sent to the Secretary of the State Medical Association for publication in the Journal, and that the copy shall be preserved in the archives of this association.

M. B. Glissmann, Secretary.

DOCTOR VIRGIL HENRY BARTON

Dr. V. H. Barton, McAlester pioneer, passed away at his home on East Washington, February 11th, as a result of coronary thrombosis. He was born December 9, 1877, at Kilgore, Texas; received his medical education at the University of Tennessee, following which he served as an interne at the Palestine Hospital, Palestine, Texas. He was married November 6, 1905, to Miss Ann Jordan, who died in McAlester in 1924. Dr. Barton later married Miss Katherine Quackenbush of Watertown, N. Y., who survives him. He is also survived by a daughter, Billie, age nine. During the World War he served as Captain in the medical corps, and upon his return to McAlester after the war formed a partnership with the late Dr. T. S. Chapman.

Dr. Barton was a life member of the Elks lodge, and also held membership in the First Presbyterian church of McAlester. He was past president of the Pittsburg County Medical Society and at the time of his death was physician to the Oklahoma State Penitentiary.

Funeral services were conducted by Dr. Samuel R. Braden, with interment in Oak Hill cemetery.

Cancer Program in Kansas

The Committee on Control of Cancer of the Kansas Medical Society is offering a cancer program by the following faculty:

Dr. Charles F. Geschickter of Baltimore, Md., Head of the Department of Surgical Pathology at Johns Hopkins University.

Dr. Burton T. Simpson of Buffalo, N. Y., Director of the New York Institute for Study of Malignant Diseases.

Dr. Frank L. Rector of Evanston, Illinois, Representative of the American Society for Control of Cancer.

The dates and locations are as follows:

March 30, Chanute.

March 31, Wichita.

April 1, Dodge City.

April 2, Hays.

April 3, Salina.

April 4, Topeka.

Tetany in an Asthmatic Patient Following Administration of Epinephrine

In view of the history and observations it seemed reasonably certain to Read Ellsworth and William B. Sherman, Baltimore (Journal A. M. A., January 25, 1936), that the underlying condition in the case that they discuss was a chronic infection of the upper respiratory tract with bronchial asthma. The appearance of tetany merits discussion. The normal blood calcium places the present patient in the group of tetany associated with alkalosis. Vomiting and alkaline injections can be excluded as a cause of latent tetany. Hyperventilation seems to be left as the logical explanation. The sodium of the plasma was normal. The chloride of the plasma was at the lower limit of normal, and from the carbon dioxide content it is probable that the bicarbonate was at the upper limit of normal. In these respects the blood chemical observations were similar to those found after vomiting and before gastric tetany appears. They are also representative of the blood chemistry pattern encountered in many cases of emphysema. The lungs of the patient were not definitely emphysematous. However, with low plasma chloride and high bicarbonate, slight lowering of the carbon dioxide tension by mild hyperventilation would produce a slight alkalosis. Early in the attack before the bronchial spasm could prevent it she did seem to succeed in hyperventilating slightly. Certainly latent tetany appeared. With regard to the active tetany the mechanism seemed much clearer. The failure of active tetany to appear when she was given codeine instead of epinephrine, and the prompt appearance of active tetany following the relief of the bronchial spasm by epinephrine both suggested very strongly that hyperventilation was made possible by the epinephrine and that this was responsible for the active tetany. Laryngeal spasm, the most dangerous of the symptoms of tetany, might easily be overlooked during an asthmatic attack. Latent tetany should be tested for during asthmatic attacks particularly as epinephrine, so useful in relieving the asthma, was found in the present case to precipitate active tetany. Laryngeal spasm might easily be regarded merely as a residual of the asthmatic attack, and death of the patient occur as a result of this misconception.

PROGRAM

Forty-Fourth Annual Session of the Oklahoma State Medical Association at Enid, April 6, 7 and 8, 1936

GENERAL INFORMATION

Meeting Places—Youngblood and Oxford Hotels, and Criterion Theater.

Registration—Mezzanine Floor, Youngblood Hotel. Please see that you are in good standing for 1936 before attempting to register.

Council—Will meet Monday, April 6th, 3:00 P. M., for the transaction of business affairs in Crystal Room, Lobby Floor, Youngblood Hotel.

House of Delegates—Will meet Monday, April 6th, 7:30 P. M., Ball Room, Youngblood Hotel, and at 8:00 A. M., Tuesday, April 7th, same place.

Delegates—Should present their credentials to the Credentials Committee, Registration Desk, Mezzanine Floor, Youngblood Hotel, prior to this meeting.

Credentials Committee—Doctors W. A. Howard, McLain Rogers.

Oklahoma Pediatric Society—Will meet Monday, April 6th.

Guests of Honor—Mr. G. A. Criswell, Oklahoma City; Dr. A. I. Folsom, Dallas, Texas; Dr. A. E. Hertzler, Halstead, Kansas; Dean Robt. U. Patterson, Oklahoma City; Dr. W. E. Sauer, St. Louis, Mo.

Medical Reserve Corps Dinner—Tuesday, April 7th, 6:00 P. M., Crystal Room, Youngblood Hotel.

Exhibits—Commercial Exhibits will be placed in the Youngblood Hotel, Mezzanine Floor, and the Scientific Exhibits in the Oxford Hotel, Holland Room, Lobby Floor.

Discussion of Papers—Every physician proposing to open the discussion of any paper should attempt to secure a copy of same for his information before the meeting.

GARFIELD COUNTY COMMITTEES

DR. W. P. NEILSON, GENERAL CHAIRMAN

Advisory Committee—Dr. J. M. Watson, Dr. H. F. Vandever, Dr. J. R. Walker.

Finance—Dr. J. R. Walker.

Entertainment—Dr. Glenn Francisco.

Registration—Dr. A. S. Piper.

Hotels—Dr. W. L. Kendall.

Golf—Dr. P. B. Champlin.

Scientific Exhibits—Dr. R. G. Jacobs.

Medical Reserve Corps Dinner—Dr. R. C. Baker.

Reception—Members of the Garfield County Medical Society.

WOMAN'S AUXILIARY

MONDAY, APRIL 6TH

Registration, Youngblood Hotel, Mezzanine Floor.

TUESDAY, APRIL 7TH

9:00 A. M.—Meeting of the State Executive Board, Crystal Room, Youngblood Hotel.

1:00 P. M.—Luncheon, Youngblood Hotel, Crystal Room.

2:00 P. M.—Drive around city.

4:00 to 6:00 P. M.—Tea, place to be announced at luncheon.

9:30 P. M.—President's Reception and Dance, Youngblood Hotel Ball Room.

WEDNESDAY, APRIL 8TH

1:00 P. M.—State Executive Board Luncheon, Youngblood Hotel, Crystal Room.

GOLF

MONDAY, APRIL 6TH

Annual Tournament, Meridian Country Club, starting at noon, one mile south on

Highway 81. All green fees paid. Due to inadequate locker room facilities contestants are requested to come dressed for playing. The Club consists of eighteen fine sand greens and we are sure that all who play will enjoy the tournament.

Prizes have been donated by the following individuals and firms:

Caviness Surgical Supply Co., Oklahoma City.

Mid-West Surgical Supply Company, Wichita.

A. S. Aloe Company, St. Louis.

Sanford-Frazier-Purdum Drug Store, Enid.

Sanford-Frazier-Stunkle Drug Store, Enid.

Sanford-Frazier Drug Store, Enid.

Corry Drug Store, Enid.

Enid General Hospital.

Baptist Hospital.

Enid Springs Hospital.

Dr. Paul B. Champlin.

Youngblood Hotel.

Oxford Hotel.

TUESDAY, APRIL 7TH

All members of the State Medical Association may play at any time, green fees paid by the person playing.

PAUL B. CHAMPLIN,
Chairman of the Golf Committee.

GENERAL SCIENTIFIC SECTION

General Scientific Sections will be held, beginning at 9:00 A. M., in the Criterion Theater.

TUESDAY, APRIL 7TH

9:00 A. M. to 10:00 A. M., DRY CLINICS:
Dr. J. M. Watson, Presiding

9:00 to 9:15—"Intravenous Urography"—
Dr. H. H. Hudson.

9:15 to 9:30—"Anomalies of the Eye"—
Dr. J. R. Walker.

9:30 to 9:45—"Leukemia—Three Cases"—
Dr. P. B. Champlin.

9:45 to 10:00—"Endocrine Dysfunction in the Mentally Defective"—Dr. G. E. Mathews.

10:00 A. M. to 10:30 A. M.—"Compensa-

sation Insurance"—Mr. G. A. Criswell, Oklahoma City.

10:30 A. M. to 11:00 A. M.—"Some Important Contributions to Medical Science by Military Surgeons"—Dean Robt. U. Patterson, Oklahoma City.

11:00 A. M. to 12:00 A. M.—"Cancer of the Larynx"—Dr. W. E. Sauer, St. Louis, Mo.

WEDNESDAY, APRIL 8TH

9:00 A. M. to 10:00 A. M. DRY CLINICS:
Dr. J. M. Watson, Presiding

9:00 to 9:15—"Tinea"—Dr. W. B. Newell.

9:15 to 9:30—"Allergy in the Diagnosis of Disease"—Dr. F. M. Duffy.

9:30 to 9:45—"Some Items of Interest"—Dr. W. A. Aitken.

9:45 to 10:00—"Some Remarks Concerning Foetal Circulation,"—Dr. D. D. Roberts.

10:00 A. M. to 11:00 A. M.—"Pyelitis in Children"—Dr. A. I. Folsom, Dallas, Texas.

11:00 A. M. to 12:00 A. M.—"Goiter"—Dr. A. E. Hertzler, Halstead, Kansas.

GENERAL MEETING

TUESDAY, APRIL 7TH

8:00 P. M.

Ball Room, Lobby Floor, Oxford Hotel, Dr. W. P. Neilsen, General Chairman, Presiding.

Invocation—Rev. Robert Smith, Pastor First Methodist Church.

Introduction of Guests—Dr. W. P. Neilsen, Enid.

Address of Welcome—Dr. J. M. Watson, President, Garfield County Medical Society.

Response—Dr. Thomas McElroy, Ponca City.

Phillips University Quartette.

Introduction of President-Elect—Dr. L. H. Ritzhaupt, Guthrie, Retiring President.

President's Address—Dr. Geo. R. Osborn, Tulsa.

9:30 P. M.

President's Reception—Ball Room, Mezzanine Floor, Youngblood Hotel.

SECTIONS

All Sections will meet at 1:30 P. M., Tuesday, April 7th, and at the same hour on Wednesday, April 8th. Meeting places will be as follows:

Surgery—Ball Room, Mezzanine Floor, Youngblood Hotel.

Medicine—Ball Room, Lobby Floor, Oxford Hotel.

Eye, Ear, Nose and Throat—Room 315, Youngblood Hotel.

Obstetrics and Pediatrics—Enid Room, Second Floor, Youngblood Hotel.

Genito-Urinary Diseases and Syphilology—Parlor, Second Floor, Oxford Hotel.

Dermatology and Radiology—Room 206, Second Floor, Oxford Hotel.

OKLAHOMA PEDIATRIC SOCIETY MONDAY, APRIL 6TH

President—JULIAN FEILD, Enid

Secretary—BEN H. NICHOLSON, Oklahoma City.

Morning Session
(10:00 A. M.)

Presentation of Pediatric Cases—Members of the Garfield County Society.

12:30 P. M.—Round Table Luncheon
Youngblood Hotel

"A Discussion of the Specific Prevention and Treatment of Measles, Whooping Cough, Diphtheria, Scarlet Fever and Meningitis"—Discussion led by C. E. BRADLEY, Tulsa, and GEO. GARRISON, Oklahoma City, assisted by M. J. SEARLE, D. J. UNDERWOOD and LAVERN HAYS, Tulsa.

Afternoon Session

2:00 P. M.

Hotel Youngblood

President's Address—JULIAN FEILD, Enid.

"Gastro-Intestinal Allergy in Children"—A. A. WALKER, Wewoka. Discussion opened by WALLACE IVY, Duncan.

"Common Allergic Problems Seen in Everyday Pediatric Practice"—RALPH BOWEN, Oklahoma City. Discussion opened by FORREST ETTER, Bartlesville.

"Observations on the Growth and State

of Nutrition of Premature Infants Given an Antirachitic and Antiscorbutic Food"—G. R. RUSSELL, Tulsa. Discussion opened by HUGH MONROE, Lindsay.

"The Immunization of Children Against Communicable Disease"—C. M. PEARCE, Oklahoma City. Discussion opened by C. V. RICE, Muskogee.

"The Treatment of Peritonitis from Ruptured Appendix, Report of a Case"—O. L. PARSONS, Lawton.

Election of Officers.

SECTION ON GENERAL SURGERY

Ball Room, Mezzanine Floor, Youngblood Hotel

Chairman—A. S. RISSER, Blackwell.

Vice-Chairman—G. E. STANBRO, Oklahoma City.

Secretary—S. E. KERNODLE, Oklahoma City.

TUESDAY, APRIL 7TH
1:30 P. M.

"Head Injuries"—HARRY WILKINS, Oklahoma City.

"Injuries of the Spine"—D. H. O'DONOGHUE, Oklahoma City.

"Fractures of the Long Bones"—RAYMOND G. JACOBS, Enid.

"Visceral Injuries"—F. A. HUDSON, Enid.

"Traumatic Shock"—G. E. STANBRO, Oklahoma City.

"Burns and Infections"—THOMAS McELROY, Ponca City.

"Medico-Legal Aspects"—P. C. SIMONS, Attorney, Enid.

WEDNESDAY, APRIL 8TH

Chairman's Address—A. S. RISSER, Blackwell.

Election of Officers.

"Hernia"—A. E. HERTZLER, Halstead, Kansas.

"Diverticulum of Oesophagus" (Lantern Slides)—R. M. HOWARD, Oklahoma City.

"Appendicitis"—HORACE REED, Oklahoma City.

(A) Medical Aspects of Gall-Bladder Disease—J. F. DALY, Pawhuska.

(B) *Factors of Safety in Gall-Bladder Surgery*—CLARENCE C. HOKE, Tulsa.

"Comparison of Cyclopropane with Other Anesthetics" (Lantern Slides)—GEO. MECHLING, Oklahoma City; J. A. MOFFITT, Oklahoma City.

SECTION ON GENERAL MEDICINE

Ball Room, Lobby Floor, Oxford Hotel

Chairman—BERT F. KELTZ, Oklahoma City.

Vice-Chairman—W. G. KIEBLER, Enid.

Secretary—E. H. SHULLER, McAlester.

TUESDAY, APRIL 7TH

1:30 P. M.

"Prevention of the Complications of Diabetes Mellitus"—BERT F. KELTZ, Oklahoma City.

"Diseases of the Paranasal Sinuses in Relation to Internal Medicine"—W. E. SAUER, St. Louis, Mo.

"Treatment of Pneumonia"—R. Q. GOODWIN, Oklahoma City.

"Pyelitis in Infants"—A. I. FOLSOM, Dallas, Texas.

"Intranasal Oxygen Therapy"—H. K. SPEED, Sayre.

"Mimics of Gastro-Intestinal Diseases"—MINARD JACOBS, Oklahoma City.

"Study of the Etiology and Diagnosis of Peptic Ulcer"—F. M. DUFFY, Enid.

"The Diagnosis and Non-Surgical Treatment of Peripheral Vascular Disease"—E. RANKIN DENNY, Tulsa.

WEDNESDAY, APRIL 8TH

1:30 P. M.

Election of Officers.

"Recent Advances in Endocrinology"—HENRY H. TURNER, Oklahoma City.

"Intestinal Myiasis"—W. J. BRYAN, JR., Tulsa.

"The Treatment of Pulmonary Tuberculosis"—FLOYD MOORMAN, Oklahoma City.

"Digitalis and Its Use"—GEO. H. NIEMANN and D. M. GORDON, Ponca City.

"Medical Treatment of Thyroid Disease"—C. J. ROBERTS, Enid.

SECTION ON EYE, EAR, NOSE AND THROAT

Room 315, Youngblood Hotel

Chairman—PAULINE BARKER, Guthrie.

Vice-Chairman—PHIL HEROD, El Reno.

Secretary—H. F. VANDEVER, Enid.

TUESDAY, APRIL 7TH

1:15 P. M.

Chairman's Address—PAULINE BARKER, Guthrie.

"Things Every OLAR Man Should Know"—W. E. SAUER, St. Louis.

"Cough—Its Relation to Pharyngeal and Nasal Infection"—L. C. MCHENRY, Oklahoma City. Discussion, A. E. HALE, Alva.

"Malignancies of the Larynx"—ARTHUR DAVIS, Tulsa. General discussion and questions.

"Differential Diagnosis of Fifth Nerve Neuralgias"—JESS HERRMANN, Oklahoma City. Discussion, MARVIN D. HENLEY, Tulsa.

"Practical Technic of Conducting Hearing Test and Evaluation of Same"—C. A. PAVY, Tulsa. Discussion, FRED C. HICKS, Oklahoma City.

WEDNESDAY, APRIL 8TH

1:15 P. M.

Election of Officers.

"Fever Therapy in Ocular Manifestations of Syphilis"—A. N. LEMOINE, Kansas City, Mo. Discussion, EDMOND S. FERGUSON, Oklahoma City.

"Eye Injuries in Compensation Work"—ORLANDO SMITH, Tulsa. Discussion, W. A. HUBER, Tulsa.

"Eye Fields, Importance of"—F. M. COOPER, Oklahoma City. Discussion, HENRY S. BROWNE, Ponca City.

"Cross Eyes"—J. R. REED, Oklahoma City. Discussion, C. B. BARKER, Guthrie.

"Gonorrheal Ophthalmia"—W. ALBERT COOK, Tulsa. Discussion, GORDON FERGUSON, Oklahoma City.

SECTION ON OBSTETRICS AND PEDIATRICS

Enid Room, Second Floor, Youngblood Hotel

Chairman—HUGH EVANS, Tulsa.

Vice-Chairman—GEO. H. GARRISON, Oklahoma City.

Secretary—M. B. GLISMANN, Okmulgee.

TUESDAY, APRIL 7TH

"Acute Otitis Media in the Child"—H. C. CHILDS, Tulsa. Discussion: C. V. RICE, Muskogee; JULIAN FIELD, Enid.

"Obstetrics and the General Practitioner"—H. M. McCLURE, Chickasha.

"Mastoiditis in Mal-Nourished Infants"—CLARK H. HALL, Oklahoma City. Discussion: L. C. McHENRY, Oklahoma City; C. E. BRADLEY, Tulsa.

"Mechanical Problems in Obstetrics"—E. E. RICE, Shawnee.

"The Care of Premature Infants"—A. L. SALOMON, Oklahoma City. Discussion: ROY EMANUEL, Chickasha; G. R. RUSSELL, Tulsa.

"Pyelitis in Pregnancy"—FLOYD GRAY, Oklahoma City.

WEDNESDAY, APRIL 8TH

Election of Officers.

"The Rheumatic Heart in Children"—H. A. RUPRECHT, Tulsa. Discussion: LEA A. RILEY, Oklahoma City; HUGH GRAHAM, Tulsa.

"Nervous and Mental Problems in Obstetrics"—JULIAN FIELD, Enid.

"The Allergic Infant"—RALPH BOWEN, Oklahoma City. Discussion: C. W. ARRENDALL, Ponca City; FANNIE LOU BRITAIN LENEY, Oklahoma City.

"Recent Advances in Obstetrics" (Review of the Literature)—J. B. ESKRIDGE, Oklahoma City.

"The Etiology and Prevention of Osteomyelitis in Children"—IAN MACKENZIE, Tulsa. Discussion: D. H. O'DONOGHUE, Oklahoma City; CHAS. E. WHITE, Muskogee.

SECTION ON GENITO-URINARY DISEASES AND SYPHILOLOGY

Parlor Second Floor, Oxford Hotel

Chairman—A. R. SUGG, Ada.

Vice-Chairman—FRANK J. BAUM, McAlester.

Secretary—ONIS G. HAZEL, Oklahoma City.

TUESDAY, APRIL 7TH

1:30 P. M.

"Ketogen Diet in Urology"—ANSON L. CLARK, Oklahoma City.

"A Study of Abnormal Kidney Positions and Their Correction"—ROBERT H. AKIN, Oklahoma City.

"Transurethral Prostatic Resection in the Poor Risk Patient"—HARRY M. SPENCE, Ponca City.

"Some Practical Considerations in the Treatment of Complications in Gonorrhea"—A. I. FOLSOM, Dallas.

Election of Officers.

SECTION ON DERMATOLOGY AND RADIOLOGY

Room 206, Second Floor, Oxford Hotel

Chairman—W. E. EASTLAND, Oklahoma City.

Vice-Chairman—J. F. CAMPBELL, Muskogee.

Secretary—C. M. MING, Okmulgee.

TUESDAY, APRIL 7TH

1:30 P. M.

Chairman's Address—"Recent Advances in Deep X-Ray Therapy"—W. E. EASTLAND, Oklahoma City.

"The Problem of Treatment of Cancer of the Breast"—RALPH E. MYERS, Oklahoma City. Discussion, LEON H. STUART, Tulsa.

"The Use of X-Ray in the Diagnosis of Breast Tumors"—IRA H. LOCKWOOD, Kansas City, Mo. Discussion, JOHN E. HEATLEY, Oklahoma City.

"Precancerous Lesions of the Skin"—DARRELL G. DUNCAN, Oklahoma City. Discussion, CHAS. J. WOODS, Tulsa.

"Anomalies of the Spine"—JOHN E. HEATLEY, Oklahoma City. Discussion, W. S. LARRABEE, Tulsa.

WEDNESDAY, APRIL 8TH

1:30 P. M.

Election of Officers.

"Diagnosis and Treatment of Malignancies of the Testes"—MORRIS B. LHEVINE, Tulsa. Discussion, H. S. BROWN, Tulsa.

"Oral Roentgenology"—EDWARD D. GREENBERGER, McAlester. Discussion, F. G. DORWART, Muskogee.

"Diagnosis and Treatment of Malignant Diseases of the Mouth"—PAUL B. CHAMPLIN, Enid. Discussion, A. RAY WILEY, Tulsa.

COMMITTEE REPORTS

These reports are made in compliance with provisions of the Constitution and By-Laws which call for publication of such matter in the issue of The Journal preceding the Annual Session.

Report of the Committee on Maternity and Infancy Welfare

We, your committee on maternal and infant welfare, beg leave to submit the following report, which is based in part on material included in the report of the committee of State and Territorial Health Officers, appointed to consider standards for state divisions of maternal and child health, personnel, and programs. Adopted by the State and Territorial Health Officers in conference at the children's bureau in Washington, June 19, 1931, we include, also, material taken from the report of the American Committee on Maternal Welfare, Fred L. Adair, chairman.

The last mentioned committee is composed of members from: American Gynecological Society, The American Association of Obstetrics, Gynecology and Abdominal Surgery, The American Pediatric Society, American Child Health Association, and the Section on Obstetrics, Gynecology, and Abdominal Surgery of the A. M. A. The joint committee worked out a tentative program of Maternal Welfare which was approved by the component societies. This joint committee recognized: first, the paramount importance of safe-guarding the life and health of the mother, by decreasing in number the infections following abortion and childbirth, and by the control of toxemias; second, the desirability of an increase of fruitful pregnancies, by decreasing sterility, by reducing the number of abortions and premature births, and by attempting the prevention of stillbirths; third, the urgent need of more and better maternal care during the prenatal, natal, and postnatal periods; and, fourth, that concrete results in the improvement of conditions surrounding maternity and infancy must depend largely on general application of existing knowledge, and on further investigation of the many problems which contribute to morbidity and mortality of both mothers and infants.

This committee decided that its functions were: first, the elaboration of a complete, practical scheme embodying the ideals of maternal welfare; second, the correlation of maternal welfare with other health and welfare activities, especially infant and child welfare; third, the cooperation with government and state agencies on the problem of maternal welfare; and, fourth, close cooperation with pediatricians in working out those problems, in which infant, child, and maternal welfare were closely associated.

Later, in June, 1933, steps were taken to enlarge this committee. The Pacific Coast Society of Obstetricians and Gynecologists, The Central Association of Obstetricians and Gynecologists, The Southern Medical Association, The New England Obstetricians and Gynecologists Society, and the Southeastern Obstetrical Assembly were invited to select a member to represent them on this joint committee, which was incorporated in Illinois under the name of The American Committee on Maternal Welfare, Inc., on April 16, 1934. The object as stated in the By-Laws is as follows:

The object is to awaken and stimulate the interest of members of the medical profession in co-operating with public and private agencies for the protection of the health of mothers and their offspring before, during pregnancy and labor, and

after confinement, to the end that the conditions which menace and interfere with the health or life of the mother or the infant may be improved or prevented, and disease and disorder corrected and prevented, health promoted and life saved, and to teach principles and practices of general hygiene and health to parents.

This committee suggests that this matter be brought before the State Medical Association, that a State Committee be formed which in turn would sponsor the formation of a similar committee in each of the county societies. A maternal welfare program would in this way become an official part of the activities of the various state and component county medical societies. The welfare of the infant and child is dependent largely on the welfare of the mother and that on both rests the welfare of the community. This committee is interested in promoting such welfare by furthering the practice of safe and sane obstetrics and by stressing the importance of improved antepartum, intrapartum, and postpartum care in the interest of the mother, her offspring, and the community. This end can only be obtained by the continued, increased leadership, cooperation, and interest of medical men in better obstetrics.

LOCAL HEALTH PROGRAM

In planning for a local health program for mothers and children in rural districts and small centers of population, it is believed that emphasis should be placed by the health authorities, in cooperation with the county dental and medical associations, on the development of certain minimum health service for mothers and children unable to obtain them otherwise, and on state and local programs for education of lay and professional groups in the essentials of adequate maternal and child care. In the light of experience in some sections of the country, it is believed that medical and dental services should be provided preferably by local physicians and dentists, and paid by the local health department. If local physicians and dentists are not available, other arrangements will have to be made. In all health services cooperation of local medical and dental organizations should be obtained.

Health services should include the following:

1. Prenatal, infant, and preschool services; permanent conferences in the center or centers of a community.
2. School health services; health examinations health education programs to be provided by local physicians and dentists.
3. Health services to children entering employment or at work.
4. Health service to special groups of children; as handicapped children, children in institutions, and children in families on relief, in cooperation with social welfare agencies of county or district.
5. Public health nursing service for mothers and children of all ages.
 - (a) Home visiting in connection with maternal and child health programs in all its phases.
 - (b) Service at prenatal and child health conferences, school health examinations, and in parent-teacher's conferences for the purpose of securing correction of remedial defects.
 - (c) Maternity nursing service for care of mothers at delivery and postpartum. A bedside nursing service and educational program in maternal care for the women

of the local communities. Much or all of the good coming from good prenatal care may be lost if there is poor nursing care or none at all at delivery and post-partum.

STATE-WIDE PROGRAMS

There should be a division of maternal and child health in each state coordinate with all other major administrative divisions, and with a full time director responsible to the health officer. In order to develop local health services for mothers and children, the State Health Department should provide leadership. For those local communities unable to develop even minimum service, it may also need to provide assistance in the form of funds, or personnel, or both.

Functions of the division of maternal and child health:

The function of this division is primary advisory and educational in nature.

The development of an educational program that would reach both lay and professional might include:

- (a) State-wide planning for education of lay groups in the essentials of maternal and child care with special emphasis on ways and means of obtaining these essentials through local physicians, health departments, etc.
- (b) Continued instruction for professional groups in the way of post-graduate courses.
- (c) Continued instruction of midwives, with gradual raising of standards.
- (d) Cooperation with departments of public instruction and other groups in the development of a program of education of students in high schools, normal schools, and colleges in the essentials of maternal and child care.

Grants to States for Maternal and Child Welfare under the Social Security Act, which was adopted by Congress and approved by the President August 14, 1935.

The Act has eleven titles; the fifth title is Grants to States for Maternal and Child Welfare.

Purpose of Federal Grants:

The annual appropriation authorized, \$3,800,000, is for the purpose of enabling each State to extend and improve, as far as is practicable under the conditions in such State, services for promoting the health of mothers and children, especially in rural areas and in areas suffering from severe economic distress.

Federal Administration:

The administration of this part of the Act will be under the immediate direction of a Maternal and Child Health Division of the Children's Bureau of the United States Department of Labor, headed by a physician and receiving general supervision from the Assistant Chief of the Children's Bureau, who is also a physician.

Amounts Available to States:

The apportionment of funds under the terms of the Act is shown in table 1. The amount of \$3,800,000 authorized for maternal and child health is divided as follows:

FUND A

Available for payment of half of total expenditure under approved plans (within the amount available for allotment to each State).....\$2,820,000
Uniform apportionment, \$20,000 to each State\$1,020,000
Apportionment on basis of live births.....\$1,800,000

FUND B

Available for allotment according to financial need for assistance in carrying out State plan, after number of live births is taken into consideration\$980,000

Therefore, we, your committee, after a careful study of the recommendations of these two committees, each composed of the foremost men of the United States in maternal and infant welfare, and after consideration of the work of our own State Health Department, under the direction of Dr. C. M. Pearce, and in order that our State Health Department may fulfill its functions, namely, advisory and educational, we recommend that the President of the State Medical Association, each year, appoint a committee on maternal and child welfare, which in turn would sponsor the appointment of a similar committee in each County Medical Society. In this way a maternal welfare program would become an official part of the activities of each County Society and State Association to work in conjunction with the State Department of Maternal and Child Welfare.

Personnel of Division of Maternal and Child Health:

We recommend a full time director:

Who shall be directly responsible to the health officer of the State, and who shall be a physician from a reputable medical school, preferably one trained in the clinical aspects of pediatrics and obstetrics, and with experience in maternal and child health activities.

- (a) Additional staff for consultation, or advisory full time or part time physicians, with training and experience, as may be required.
- (b) To this staff we recommend that a full time dentist be added.

Respectfully submitted,

Eva Austin Wells, Chairman
Imogene Butts Mayfield
Lavern Hays.

1936 Report of Committee on Post-Graduate Medical Teaching

A post-graduate course of instruction in medicine and surgery was given during February, 1936. The centers subscribing to it were Enid, Woodward, Altus, El Reno, Oklahoma City, and Shawnee. The faculty was composed of Doctors Robert S. Dinsmore, A. Carlton Ernstene, and Charles L. Hartsock, of the Cleveland Clinic. Two members of the faculty became snowbound out of Saint Louis, and were unable to reach Enid; therefore the course was not given there. The total attendance was 616. The committee has received much favorable comment on the lectures given, because of their practicability and concise presentation.

A course had been tentatively planned for the fall of 1935, but the organization of this was delayed because we felt there was a possibility of the revival of the Medical Extension Department in the University. Your entire committee, together with the Secretary of the State Association and the State Commissioner of Health, had a conference with the governor in September, at which time he stated that he would do all he could to aid us in our endeavor. It was finally made quite clear to us that the Board of Regents could not be influenced to rescind its former resolution; therefore, it was decided that the State Association would organize and conduct the courses. Plans are now being made for a nine weeks circuit course, to be given early in the fall of 1936.

Approximately \$550.00 of the \$1,200.00 voted at the last annual meeting for post-graduate medical teaching has been spent this year, but it is likely that sufficient income will accrue from the fall courses to overcome this expenditure. The committee requests, however, that the Association, at its annual meeting this year, appropriate \$550.00 to bring the fund to its original amount of \$1,200.00.

We wish to express our deep appreciation to Mr. L. W. Kibler for his aid in the organization and direction of the course given so far this year, and for his activity at all times in behalf of post-graduate medical teaching.

Respectfully submitted,

Henry H. Turner, Chairman
H. C. Weber
W. A. Hardy.

Report of the Medical Economics Committee

The Medical Economics Committee makes some observations and one recommendation:

1. The rural districts and small towns are being depleted of their physicians, chiefly by death, and these men are not being replaced. This situation is deplorable and urgently needs to be studied. The graduates who formerly began to practice in rural districts no longer go there. The answer to this problem cannot be found in the extensive educational program of preventive medicine as exemplified by the use of typhoid serum, diphtheria toxoid, smallpox vaccine, or the extensive malaria control program, all of which have markedly reduced the incomes of physicians in these localities.

2. The technological advancement of diagnostic procedures with the widespread publicity among the laity of the infallibility of these methods, aided by good roads and salesmanship, is working an economic hardship upon the rank and file of our members. This state of affairs is causing the folks in the lower income brackets (and they constitute the majority), who cannot afford to go to the "clinic" to be "diagnosed," to ask this question: "How can we secure this service?"

3. The initiation and growth of private hospital insurance companies and allied concerns that supply medical service in addition to hospitalization will soon present an economic problem to our members who live where such concerns operate and who are not allied with them.

4. The practice of the casualty insurance companies, other than the state insurance fund, is handsomely enriching a few of our members, and the testimony given by these physicians before the State Industrial Commission for their masters is not only depriving our profession as a whole of incomes but is breeding a merited disrespect for it within the minds of the insured.

5. The records reveal that there are over nine hundred registrants of one cult alone practicing the healing art in Oklahoma. This cult has registered forty-two since July 1, 1935. We mention this cult, first, to point out its rapid growth, which presents among other problems a serious medical economic situation, and, second, to say that we are responsible for this growth. The citizenry of an American state will never permit a legislative body to destroy any group devoting itself to the healing art.

The foregoing observations are only a few indications that our profession is economically ill in Oklahoma. Time and space prohibit mentioning more.

We recommend that a thorough study be made by this association and suggest that the House of Delegates authorize the spending of sufficient

funds to make a comprehensive economic survey of our profession. We believe that this is a problem meriting much study. We feel that as much time, thought, and money as is devoted to the study of cancer should be utilized. Parenthetically, we wish to suggest that Dr. J. T. Martin, Oklahoma City, head the survey if funds are made available.

Respectfully submitted,

E. P. Davis, Chairman
Ben H. Cooley
C. M. Maupin.

Report of Committee on Medical Education and Hospitals

Your Committee on Medical Education and Hospitals, wish to make the following report. Fostered by the committee on Post-Graduate Medical Teaching of the Oklahoma State Medical Association, three outstanding men from the Cleveland Clinic of Cleveland, Ohio, have just completed a course of lectures in several cities in Oklahoma. We wish to commend to this committee our highest appreciation for this work.

We also want to thank this committee for their courageous stand they have taken of continuing this work after the Extension Bureau of our Oklahoma State University made it impossible for us to continue under their supervision due to the action of some members of the Board of Regents. We believe that we should take more interest in the selection of our Regents by cooperating with our Governor to the extent of advising with him in the appointment of men to take places of those whose term will expire at stated intervals. And also get behind our Legislators and see that such men that believe in the higher medical education and men that will cooperate with the extension work of our State University, be approved.

We further suggest that all hospitals in the State make an attempt to standardize according to the requirements as suggested by the American College of Surgeons. We feel that we should also lend our help toward relieving the congested conditions of our Tuberculosis Hospitals and Hospitals for the Insane.

Respectfully submitted,

Robert M. Anderson, Chairman
Jas. T. Colwick
G. S. Barger.

Report of the Committee on Fellowship

The report of the Fellowship Committee is not as much what has been done as it is recommendations for work to be undertaken. Having no rules or precedents to follow we are mainly trying to formulate a procedure for the future.

The Committee came into being by appointment from our President, Dr. Louis Ritzhaupt, on August 22, 1935, with the request that an interest be stimulated for a good attendance at Enid in 1936. It is his desire and request that a greater interest be manifested in our State meeting, by the rank and file of our membership. To get new faces to appear among us and to create a new activity and enthusiasm in the Oklahoma State Medical Association.

With that problem before us the Fellowship Committee met and talked over the possibilities of our task. We have not had any information as to our program at Enid or who we will be privileged to hear. We are unable, at this time, to inform our membership what problems of vital interest will come before the assembly for discussion. We hope by the future continuation of this Committee that

a definite procedure can be worked out whereby the work of the Association can be sold to its membership and a strong interest developed in every section of the state, that our attendance can be greatly increased through a warm and courteous Fellowship spirit. May we meet upon a plane of equality and forget selfish ambition for the sake of peace and harmony. May our Fellowship be truly felt and honestly expressed in all our relations. May the spirit of the Great Physician animate us and help us to be generous with each other and to our patrons. May any animosity or selfish ambitions be banished from among us forever, and let us foster and cultivate the generous feelings of our predecessors who have labored and sacrificed so much to give to us our present day heritage.

The plan of work decided on by our committee was to send a letter to each County Medical Society to be read in regular meeting the month before our State meeting. In those meetings the annual meeting can be discussed and arrangements made to get as good a delegation as possible from each county. Then about a week or ten days before the State meetings, to send a circular letter to each member of the State Association urging their attendance. These letters we hope will help to stimulate an interest and increase our attendance.

The Committee wishes to make the following suggestions and recommendations:

1. The committee to consist of three or more members, appointed by the president to serve for one year.

2. The committee to be made a permanent committee of the Association, to be prepared at any time to cooperate and advise with the various departments of State which regulate and influence the handling of the citizens coming under this heading.

3. That the duties of the committee to include: promoting an active Fellowship in the Association; to help provide a part of the program intending to promote a closer Fellowship; to make contact during the year with the different County Medical Societies through the Councilors in their respective districts; to encourage better attendance at our annual meetings.

4. It is suggested that the first night of the annual meeting be designated as Fellowship night and that the program for that evening be arranged so as to foster that idea.

5. The committee to assume other duties as may be designated, from time to time, by the President of the State Association.

This report and recommendations were formulated by your committee on Fellowship in a called meeting of its members on February 4, 1936, at Stillwater, Oklahoma.

Respectfully submitted,

Roy E. Waggoner. Chairman
J. C. Hawkins
H. C. Manning.

Report of Committee on Study and Control of Cancer

The prevalence of malignancies in our state emphasizes the continuing need for active, intelligent effort by the profession in the dissemination of all known knowledge concerning the prevention, recognition and treatment of cancer.

Since our last report, several meetings, clinics and lectures have been sponsored by the local county societies, and others are scheduled for the next three months. The organization work has been done by Mr. L. W. Kibler of the Public Relations Department of the State University.

Clinics and meetings planned for the Oklahoma Panhandle unfortunately had to be cancelled, because the local profession felt that conditions resulting from the dust storms would make the work useless.

The American Society for the Control of Cancer has continued to give invaluable assistance. It has furnished literature, films, projection equipment and newspaper releases. All of this material is available for use by the local county societies and they are urged by your committee to take advantage of the opportunity.

The following education material may be obtained from Dr. E. S. Lain, Medical Arts Building, Oklahoma City. The package will be mailed to the secretary of the local county society and postage is to be paid by him.

Film Strip Projector.

Film Strips:

Carcinoma of the Breast (medical).

Tumors of the Uterus (medical).

Fight Cancer with Knowledge (For women's clubs, luncheon clubs and other lay audiences).

Cancer: Its Life History and Practical Measures for Its Control (For university students, nurses, etc.).

Literature (Pamphlets for doctors, nurses and public).

Newspaper releases for local papers are in the hands of Dr. Wendell Long. They will be gladly sent to the secretary of any county societies where their publication can be obtained.

Wendell Long, Chairman

E. S. Lain

A. H. Bungardt.

Woman's Auxiliary to the Oklahoma State Medical Association

Woman is a natural conservator, therefore, an economist upon which the welfare of society is built. The organization of a Woman's Auxiliary to every County Medical Society would act as a balance wheel and make up the many deficiencies in religion, art, entertainment and politics that has afflicted the medical profession.

Cleveland, Garfield, Oklahoma, Pottawatomie, Tulsa and Woodward counties now have a Woman's Auxiliary organized. Mrs. Carroll M. Pounders is President of the State organization. Mrs. C. R. Rountree is Chairman of the State organization committee. These two ladies, along with the past and present officers, are aware of the fact that the American Medical Association is sponsor of the idea and in turn places the responsibility of organization, the interest and progress of the Oklahoma Auxiliaries upon the State Medical Association.

The functions of the Auxiliary are:

1. To promote good fellowship, aid in entertainment at medical meetings and increase attendance at such meetings.

2. To give community service wherever such service is needed, particularly service related to the work of the medical profession.

3. And to educate the public in medical and health laws, to participate in the passage of such legislation as is requested by the Medical Society.

4. To inform themselves concerning questions of personal and public hygiene, community cooperation, medical and health laws, national, state and local health administration, and the relation of the medical profession to the public.

5. To aid the medical profession in its educational work with the public through organizations to which they belong.

(a) This is accomplished by accepting positions of leadership in such organizations, particularly on health committees, so that authentic literature may be chosen for programs and for distribution, that informed speakers may be selected, and that only such types of health projects may be carried on as are shown by the Advisory Councils to be scientifically sound.

This program is very broad and comprehensive. The medical profession should recognize the importance of, and lend their aid to the organization of an Auxiliary in each of the sixty counties which do not now have one. If the President or Secretary of the County Medical Associations will write to Mrs. C. R. Rountree, State Organization Chairman, 2038 West 19th Street, Oklahoma City, Oklahoma, she will gladly give you the information and authority to create a Woman's Auxiliary to your Society.

Louis H. Ritzhaupt.

ANNUAL REPORT OF THE SECRETARY-TREASURER-EDITOR

April 16, 1935, to February 29, 1936

TO ALL MEMBERS OF THE OKLAHOMA STATE MEDICAL ASSOCIATION:

In conformity with the Constitution and By-Laws, I hereby submit to the Council and through them to the membership a report of the various transactions of my office during the past ten and one-half months.

Detailed statements for all financial transactions, duplicate deposit certificates and other business matters I hereby submit for audit by the Council.

MEMBERSHIP: On April 16, 1935, we had 1552, and on this date we have 1333, this giving us 219 members less than at the time of last year's audit, thereby decreasing the receipts from memberships by about \$876.00.

DEATHS OF PHYSICIANS: The list of physicians who have died during the past year will be found in the report of the Committee on Necrology which will be published with the report of the transactions of the House of Delegates.

MEDICAL DEFENSE: The following cases have either been settled, dropped or disposed of in the following manner:

Settled: Tulsa County, No. 60175
Comanche County, No. 12828
Pontotoc County, No. —
Garvin County, No. —

Pending: Caddo County, No. 9407
Choctaw County, No. 8644
LeFlore County, No. —
Comanche County, No. —
Pittsburg County, No. —
Carter County, No. —
Logan County, No. —

In addition to the above the following cases are now pending, the progress and status of which is unknown, as they are pending or dormant in the courts:

Blaine County, No. —
Carter County, No. —
Craig County, No. —
Hughes County, No. —
Payne County, No. —
Pottawatomie County, No. —

I am very glad to report that the audit for the past year shows that the income from the Journal practically pays the expense of its publication.

We have received some excellent national advertising through the Cooperative Medical Advertising Bureau and no national advertising is accepted unless approved by this Bureau.

The Journal has during the past year maintained its usual size and the scientific material has been of the usual high standard.

The further development of the abstract department of The Journal is a feature well worth mentioning and I want to take this opportunity to thank each one of the abstractors for the excellent material which they have furnished The Journal, as it is a time consuming task; however, it appears that it is well worth while.

The offices of the ASSOCIATION have been moved to the McAlester Clinic Building where the work of the Association can be more conveniently handled.

It has been necessary to use some of the reserve funds of the Association to carry on the Post Graduate Medical Teaching as we at this time received no assistance from the Extension Department of the University of Oklahoma.

The schedule of Bills Receivable has been submitted to the Council and amounts to \$861.75.

THE FIRST NATIONAL BANK

McAlester, Oklahoma, March 3, 1936.

Dr. L. S. Willour, Secretary-Treasurer,
Oklahoma State Medical Association,
McAlester, Oklahoma.

Dear Dr. Willour:

This is to certify that according to our records, the following accounts reflected a credit balance, subject to check, at the close of business February 29, 1936, as follows:

Oklahoma State Medical Association,	
General Fund	\$5,413.87
Medical Defense Fund	1,093.75

Yours very truly,

J. K. PEMBERTON,
Vice-President and Cashier.

AUDIT REPORT

Oklahoma State Medical Association
Dr. L. S. Willour, Secretary-Treasurer
McAlester, Oklahoma

For Period April 16, 1935, to February 29, 1936
By J. K. Pemberton, McAlester, Oklahoma

March 4, 1936.

Dr. L. H. Ritzhaupt, President,
Oklahoma State Medical Association,
Guthrie, Oklahoma.

Dear Dr. Ritzhaupt:

Upon request, I have audited the books of account, records and investments of

Dr. L. S. Willour, Secretary-Treasurer,
Oklahoma State Medical Association
McAlester, Oklahoma,

for the period beginning April 16, 1935, and ending February 29, 1936, and submit the following schedules, together with comments and supporting exhibits.

Cash receipts were traced to the bank through a detailed check of items received, against deposit tickets as shown in the files of the bank. Cash expenditures and disbursements were checked against the bank records, all vouchers and checks were examined and compared with the original en-

tries; endorsements scrutinized and found to be in order.

In company with Dr. L. S. Willour, Secretary-Treasurer, I have examined the following investments which are kept in a safety deposit box in The First National Bank, McAlester, Oklahoma, which box is in the name of The Oklahoma State Medical Association:

GENERAL FUND:

3½ % U. S. Treasury Bonds of 1944-46—

Bond No.	Par Value	
94180L	\$ 500.00	
94181A	500.00	
95099K	1,000.00	\$2,000.00

MEDICAL DEFENSE FUND:

3¼ % U. S. Treasury Bonds of 1943-45—

Bond No.	Par Value	
878J	\$1,000.00	
879K	1,000.00	
880L	1,000.00	\$3,000.00

All April 15, 1936, and subsequent coupons are attached to the entire total of \$5,000.00 bonds.

I find that all coupons clipped from the above bonds during the period covered by this audit, have been properly accounted for in their respective accounts.

The books of the Association are kept on an actual cash receipts and disbursement basis, and for that reason accrued items are not included in the audit, however a list of accounts payable not due on the date of audit are as follows:

McAlester News-Capital Co.....	\$477.15
Dr. L. S. Willour, Salary.....	200.00

There is attached hereto and made a part hereof, Schedule of Accounts Receivable due the Association which are not included in the Balance Sheet.

I respectfully submit the following Audit and Report for your information.

J. K. PEMBERTON, Auditor.

* * *

The foregoing statement and following Audit is submitted as my report from April, 16, 1935, to February 29, 1936.

L. S. WILLOUR, Secretary-Treasurer-Editor.

BALANCE SHEET, FEBRUARY 29, 1936

ASSETS

CURRENT ASSETS:

First National Bank, McAlester, Oklahoma.	
General Fund	\$5,404.87
Medical Defense Fund	1,093.75 \$6,498.62

INVESTMENTS—

U. S. GOVERNMENT BONDS:

General Fund (Par Value)....	2,000.00	
Defense Fund (Par Value)	3,000.00	5,000.00
		<u>\$11,498.62</u>

LIABILITIES

EXCESS OF ASSETS OVER LIABILITIES:

Balance April 15, 1935.....	\$12,264.39	
Deduct:		
Excess of Expenditures over		
Income—General Fund	1,994.27—	
Add:		
Excess of Income over Ex-		
pensitures—Medical De-		
fense Fund	1,228.50	11,498.62
		<u>\$11,498.62</u>

CASH RECEIPTS AND DISBURSEMENTS

April 16, 1935, to February 29, 1936

GENERAL FUND:

Balance	\$ 1,772.07
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RECEIPTS:

Advertising	\$ 5,314.25
Memberships	4,104.70
Transfer from Medical De-	
fense Fund	1,627.07
Fourth 4¼ % Liberty Bond	
Redeemed (Called)	2,000.00
Fourth 4¼ % Liberty Bonds	
Sold	2,000.00
Premium Received on Liberty	
Bond Sold	46.00
Interest Received on Govern-	
ment Bonds	150.00
Time Certificate of Deposit	
Matured	2,000.00
Interest Received on Time	
C. D.	25.00

Total Receipts	17,267.02
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Total Cash to Account for.....	\$19,039.09
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DISBURSEMENTS:

Dr. L. S. Willour—	
Salary to 1-31-36 @ \$200.00	
per month	2,000.00
Oltha Shelton—	
Salary to 2-29-36 @ \$125.00	
per month	1,312.50
Salary Advance	70.00
Other Office Salaries	25.00
Expense Annual Meeting.....	742.81
Council and Delegate Expense	659.09
Legislative Expense	20.21
Post Graduate Work—Salary	400.00
Post Graduate Work—Other	
Expense	41.69
Refund—Memberships	11.00
Printing Journal	5,411.37
Postage	159.14
Printing, Stationery and Of-	
fice Supplies	45.89
Office Rent	236.25
Telephone and Telegraph	84.30
Press Clipping Service	30.00
Treasurer's Bond and Audit...	75.00
Miscellaneous Expense	109.97
Transfer to Time Certificate	
of Deposit	2,000.00
Settlement Medical Defense	
Cases	200.00

Total Disbursements	13,634.22
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Balance on Hand February 29, 1936.....	\$ 5,404.87
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MEDICAL DEFENSE FUND:

Balance April 15, 1935.....	\$ 1,492.32
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RECEIPTS

Fees Collected	1,431.00
Interest Received Government	
Bonds	97.50 1,528.50

Total Cash to Account for.....	3,020.82
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DISBURSEMENTS:

Transfer to General Fund.....	1,627.07
Medical Defense of Members	300.00

Total Disbursements	1,927.07
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Balance on Hand February 29, 1936.....	\$ 1,093.75
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CASH ON DEPOSIT

February 29, 1936

First National Bank, McAlester, Oklahoma

GENERAL FUND:

Balance as per records..... \$ 5,404.87

ADD:

Outstanding Checks:	No.	Amt.	
	3617	4.00	
	3574	1.00	
	4115	4.00	9.00

Balance as per Bank Statement and Verification Letter..... \$ 5,413.87

MEDICAL DEFENSE FUND:

Balance as per records..... \$ 1,093.75

ADD OUTSTANDING CHECKS..... None

Balance as per Bank Statement and Verification Letter..... \$ 1,093.75

INCOME AND EXPENDITURES

For Period April 16, 1935, to February 29, 1936

GENERAL FUND:

INCOME:

Advertising	\$5,314.25
Memberships	4,104.70
Premium Received Fourth 4 1/4 % Liberty Bond Sold	46.00
Interest Received U. S. Government Bonds	150.00
Interest Received on Time C. D.	25.00
Total Income	\$ 9,639.95

DISBURSEMENTS:

Salaries:	
Secretary	2,000.00
Assistant Secretary	1,382.50
Other Office Salaries	25.00
Expense Annual Meeting.....	742.81
Council and Delegate Expense	659.09
Legislative Expense	20.21
Post Graduate Work—Salary	400.00
Post Graduate Work—Other Expense	41.69
Refunds—Memberships	11.00
Printing Journal	5,411.37
Postage	159.14
Printing, Stationery and Office Supplies	45.89
Office Rent	236.25
Telephone and Telegraph	84.30
Press Clipping Bureau Service	30.00
Treasurer's Bond and Audit....	75.00
Miscellaneous Expense	109.97
Settlement Medical Defense Cases	200.00
Total Expenditures	11,634.22

Excess of Expenditures over Income for period \$ 1,994.27

MEDICAL DEFENSE FUND:

INCOME:

Fees	1,431.00
Interest Received on U. S. Government Bonds	97.50
Total Income	\$ 1,528.50

EXPENDITURES:

Medical Defense—Case Settlements 300.00

Total Expenditures 300.00

Excess of Income over Expenditures for period \$ 1,228.50

Death Rate From Alcoholism

Probably the best evidence of the extent of alcoholism can be obtained from comparative examinations of death due directly to this cause. Leary has recently reported deaths accredited to alcohol in Suffolk County, Mass., from 1913 to 1934. Most of the deaths were directly due to alcoholism as such. The added cases included a percentage of the alcoholic pneumonias in which the alcoholic factor was of primary importance and some of the cases of fractured skull in which the degree of alcoholism was responsible for the injury that led to the fracture. The list did not include deaths from automobile accidents of any kind. The criteria have not changed to any appreciable degree in the period recorded. The deaths related to alcoholism were on a relatively standard basis in the years 1913, 1914 and 1915. In 1916 and 1917 there were considerably more deaths. These were years of prosperity when workers were well paid. In 1918 and 1919, under the influence of patriotic urge, we became one of the most temperate people in the world, with a corresponding drop in the number of alcoholic deaths. Then came prohibition with little liquor available in 1920 and a still further drop in the deaths from alcohol. In the following two years a rise again began. The deaths during this period were for the most part in those who had access to bathing alcohol, bay rum, perfumes and jamaica ginger. By 1923 the bootlegging business was well established and the sources of supply were many. The alcoholic deaths continued to rise under this influence until 1925, after which they continued at a fairly high but slightly downward level until 1933. Prohibition was abolished December 4, 1933. In Massachusetts the local alcohol control system permitted the sale over the counter by druggists of ninety-five per cent alcohol. During the year ended December 4, 1934, there was a tremendous rise in the alcohol death rate. By contrast with the lowered death rate reported elsewhere the probability is indicated that the sale of concentrated alcohol is largely responsible. Since concentration as well as quantity is a known factor, there seems little doubt that the readiness with which ethyl alcohol can be purchased over the counter in drug stores is an important element in the increase reported.—Journal A. M. A., February 29, 1936.

Radio Broadcasts

The American Medical Association broadcasts over WEAf, the Red network instead of the Blue, as formerly, and certain additional stations of the National Broadcasting Company at 5 p. m. eastern standard time (4 o'clock central standard time) each Tuesday presenting a dramatized program with incidental music under the general theme of "Medical Emergencies and How They Are Met." The title of the program is "Your Health." The program is recognizable by a musical salutation through which the voice of the announcer offers the toast "Ladies and gentlemen, your health!"—Journal A. M. A., February 29, 1936.

ABSTRACTS : REVIEWS : COMMENTS and CORRESPONDENCE

SURGERY AND GYNECOLOGY

Abstracts, Reviews and Comments from
LeRoy Long Clinic
714 Medical Arts Building, Oklahoma City

Recent Statistics About Trans-Cervical Drainage (Nouvelles Statistiques Relatives au Drainage Transcervical). By Leon Gerin-Lajoie, Professeur Agregé a la Faculté de Médecine de l'Université de Montréal, Gynécologue a l'Hôpital Notre-Dame. Bulletin de L'Association des Médecins de Langue Française de l'Amérique du Nord, January, 1936.

Referring to a thesis by himself in 1929 entitled: "Sur le drainage transcervical dans les infections suppurées du bassin ayant nécessité une hystérectomie supravaginale," before he had learned about the views of J.-L. Faure, Paris, and of Howard Kelly, Baltimore, on the same subject, the author divides his contribution into four parts, as follows:

1. ON THE NECESSITY OF DRAINAGE IN CERTAIN CASES OF PELVIC INFECTION. (De la nécessité du drainage dans certains cas d'infection du bassin). Under this heading there is a strong and reasonable argument to show the difficulties and disasters that may follow the accumulation of fluid in abdomen or pelvis after operation, particularly after operation in the presence of a suppurative process. Even when there is no suppuration, circumstances indicating the probable accumulation of more than a very small amount of serosanguinolent fluid indicate the wisdom of making provision for drainage. The following quotation from an article by Faure and Siredey apparently represents the conception of the author with reference to the necessity of drainage in a given case: "It is best to drain as little as possible; but if the peritoneum is irregular, if there is oozing from adherent areas which threatens to produce more than a few spoonfuls of serosanguinolent material within a few hours, it is preferable to drain." (Il faut drainer le moins possible; mais si le péritoine est irrégulier, s'il y a des adhérences quelque peu suintantes et qui menacent de donner, dans les heures qui suivront l'opération, quelques cuillérées de liquide serosanguinolent il est préférable de drainer).

2. ON ABDOMINAL DRAINAGE. (Sur le drainage abdominal). While recognizing the great utility of abdominal drainage, attention is directed to the fact that, following a principle of physics, liquid in a closed cavity seeks the lowest level.

The author believes that capillary drainage procured by the employment of strands of suture material grouped together (faisceaux de crins) is useful in the abdominal wall outside the peritoneum, but not adequate in abdomen or pelvis. He believes that, when there is no suppuration, the "cigarette" drain with rubber tissue covering is often definitely useful and, like the capillary drain, interferes but little with the healing and subsequent integrity of abdominal wall.

In the average suppurative process in the pelvis, one must employ flexible rubber tubing or large amounts of gauze, as represented by the Mickulicz pack, probably with a rubber tube in the center of it, in order to secure sufficient drainage, and the objection is offered that in either case there is slow healing of abdominal wall and often post-operative hernia.

3. ON VAGINAL DRAINAGE (Sur le drainage vaginal). This is the route of drainage recommended after operations for infectious pathology of the pelvic organs, but the author believes it to be of particular importance after a sub-total hysterectomy for such pathology, provided the drainage tube is brought through the cervix. Anticipating this type of drainage, the vagina should be thoroughly cleaned before operation.

The author gives the credit for the technique employed by him to M. le Docteur R. Trudeau, Montreal. It is as follows: The vagina having been properly prepared, the abdominal end of the cervical stump is seized on each side by holding forceps, care being taken not to wound the uterine arteries. The canal is outlined by a uterine sound, then dilated. After this, the posterior lip of the cervix is incised in mid-line with straight, blunt pointed scissors throughout its entire length and thickness. Sharp-pointed scissors must not be employed because of danger of wounding rectum or vagina. The opening through the cervix should admit index finger.

A T-tube is employed. The stem of the T should be large enough to completely and tightly fill the opening through the cervix and long enough to extend by way of the vagina to the vulva. The average diameter of this tube is one and one-half cm., i. e., about three-fifths of an inch. The horizontal portion of the T is much smaller, and is passed through fenestra just below the upper end of the larger vertical stem to which it is fixed by silk sutures. The length of this horizontal portion should permit the ends to extend to each side of the cervix. When the T-tube is ready it is seized by its free end and pushed through the cervix into the vagina through the canal of which it usually passes without difficulty. If there should be difficulty, an assistant guides the tube from below. It is carried downward until the horizontal portion of the T rests against the abdominal end of the cervix. After the tube is in place, the incised cervix is sutured close to the tube with two or three cat gut sutures.

The toilet of the pelvis is made with care, terminated by the use of some ether.

Denuded areas are covered and protected as much as possible, the pelvic colon being utilized by loosely placing it in contact with denuded areas to protect more movable structures, especially the small intestine against fixation.

With change of gloves and instruments, the abdomen is closed, usually without additional provision for drainage. Sometimes, however, when the pathology has been rather acute, or when it has been complicated by gangrenous appendicitis,

either a cigarette drain or a flexible rubber tube is employed per abdominal incision, such drainage being usually removed in forty-eight hours. When a tube is used, it is aspirated each day, and removed when aspiration does not recover suspicious material.

At the end of forty-eight hours following operation, vaginal douches of normal saline solution at a temperature of 110 F., four litres twice a day, with very low pressure, are employed. Two days later two litres of this amount are introduced through the tube, again with low pressure, the other two litres being introduced into vagina as before.

4. **STATISTICS** (Statistiques). After studying one hundred seventeen typical cases, the author presents the following information:

(a). Twenty-four with tube drainage per abdomen showed an average stay in hospital of forty-four and one-sixth days, no mortality recorded.

(b). Thirty-nine were drained by Mickulicz pack. Five of these died—one at the end of thirty days, one in seventeen days, and one in two days, and one on the day of operation. Of the thirty-four remaining in this group there was an average stay in hospital of forty days.

(c). Fifty-nine had transcervical drainage. Five of them died—one in seventeen days, one in eleven days, one in eight days, one in three days, and one on the day of operation. Of the forty-nine remaining in this group there was an average stay in hospital of twenty-eight and one-half days.

COMMENTS: In his statistics, the author has apparently overlooked the most important fact. There was not a single death in the group where tube drainage per abdomen was employed. In the group where transcervical drainage, cried up by the author, was employed there was a mortality of between eight and nine percent. This is too big a price to pay for a little shorter stay in hospital in the cases of those who do not die.

2. The author says that when supplementary drainage per abdomen is employed in unduly acute pelvic pathology or where there is a complicating gangrenous appendicitis, the drain is usually removed in forty-eight hours. When one visualizes the pathology one is bound to conclude that it would be about as well not to drain at all. The failure to recover material by aspirating the tube is no indication that the tube should be removed. Gross drainage by way of the lumen of the tube may rapidly decrease and even cease, but through a reversal of the lymph circulation, toxic materials continues to pour out about the drainage tube. The early removal of a drainage tube, employed for the drainage of the products of inflammation, can do no possible good, regardless of the point of view from which we look at it. If it does damage by trauma, the damage is done long before forty-eight hours. Still more, there is fixation of structures about a drainage tube in the abdomen within much less time than forty-eight hours. If it stays in long enough these structures will build up barriers and separate themselves from the tube so that it can be removed easily and without damage to structures about it. If it is removed before such protection has developed there will be damage and raw surfaces for the additional absorption of toxic material, to say nothing of the cessation of drainage from the original pathologic area.

3. To employ a vaginal douche forty-eight hours after operation, when a drainage tube extends from the inside of the abdomen into the vagina, is dangerous enough; but to employ a douche by way of the tube itself—by way of a tube extending from

vagina to inside of abdominal cavity—must be unwarranted temerity, if I have any kind of proper conception of the situation. LeRoy Long.

The Place of Surgery in the Treatment of Gastric Hemorrhages. By D. C. Balfour, Staff Meetings of the Mayo Clinic, December 26, 1935.

The place of surgery in the treatment of gastric hemorrhage is frequently a debatable one. The most important primary consideration is the establishment of the cause of the hemorrhage. By far the most common cause of gastro-intestinal hemorrhage is the inflammatory lesion of the stomach or duodenum.

If the hemorrhage is caused by benign ulcer of the stomach or duodenum, the first question which comes up is whether or not operation should be undertaken for the actively bleeding ulcer. The preponderance of opinion among surgeons is that the mortality from surgical treatment of actively hemorrhagic ulcers is greater than that from medical management. However, the question as to whether this opinion is really based on facts is often raised. Finsterer of Vienna, has advocated operation as an emergency measure in cases in which hemorrhage is so serious as apparently to threaten life. He advocates gastric resection. While it may be true that massive transfusion and resection of the stomach of an exsanguinated patient might occasionally save life, any argument for introducing into the treatment as serious a procedure as partial gastrectomy is weakened by the fact that as a rule patients recover from hemorrhage from ulcer.

Whatever may be shown ultimately to be the normal risk of hemorrhage from ulcer, it should be emphasized that in all the cases reported the hemorrhage was of sufficient severity to require hospitalization of the patient, whereas probably the majority of the hemorrhages which occur from ulcer do not require hospital management. Furthermore, if we should find that the average mortality from these hemorrhages which are severe enough to require hospitalization of the patient to be ten per cent, Balfour believes that surgical procedure undertaken in this group of cases would lead to a much higher mortality than ten per cent. He feels, therefore, that inasmuch as there is yet no method of determining which hemorrhages will end fatally and which will not, the best procedure still remains to be medical management.

If the patient has had only one hemorrhage and there has been an insufficient evidence of dyspepsia or indigestion of itself to justify operation, it is questionable whether surgery should be advised. There are two reasons for questioning the advisability of operation in such occasions. First, the patient may never bleed again. Second, experience has shown that it is difficult to deal with this type of ulcer by surgical means. On the other hand, when a single hemorrhage is associated with a long standing, or even a relatively short history of severe pain, a perforating type of lesion is indicated and one that will be difficult to heal permanently by medical means. Such a lesion is most suitable for surgical treatment. He feels that if hemorrhages have been of the recurrent type, whether or not there have been associated painful episodes, operation should be advised.

He points out the necessity, when considering surgical management, to distinguish the various types of ulcer found in the duodenum. The perforating or penetrating type of ulcer nearly always requires surgical management to bring about permanent relief. Yet one of the most common types of bleeding ulcer is the multiple, relatively

superficial ulceration which undergoes various degrees of healing; in this type of case the principles of surgical management are entirely different from those in which the lesion is single and is deeply perforating. It has been accepted rather generally that when any operation is designed largely to prevent further hemorrhages, the inflammatory lesion or lesions should be removed either by local excision or by some form of partial duodenectomy, with partial gastrectomy.

However, it is rather difficult to establish this principle from statistical standpoint. Inasmuch in one large series of cases which Balfour reviewed, he found that an indirect operation alone, such as gastro-enterostomy, apparently had given almost as great protection against subsequent bleeding as did those methods which had included removal of the ulcer. He explains this surprising fact with a statement that so long as gastro-enteric anastomosis continues to function well, it probably will maintain complete healing of any lesion in the duodenum and largely prevent any recurrence of lesions in that situation. However, despite this fact he says that from a theoretical standpoint the most effective management and, because of its small risk, the most reasonable management of the bleeding type of duodenal ulcer is a thorough local excision combined with gastro-enterostomy. However, again the success with which local excision can be performed depends upon the type of lesion present. A single lesion can usually be excised; but in those cases in which there are multiple lesions, both healed and unhealed, local excision must necessarily be incomplete. His final thought was that it is very fortunate that gastro-enterostomy alone has such a profound healing effect on inflammatory lesions in the duodenum.

His conclusion was that with the most effective possible management of the bleeding type of ulcer, the protection against hemorrhage is about the same as that against recurrence of other symptoms, or about eighty-five per cent.

LeRoy D. Long.

The Diagnosis and Management of Gastro-Intestinal Hemorrhage. By P. N. North and D. L. Wilbur. Staff Meetings of the Mayo Clinic, December 26, 1935.

It is usually not necessary to make an immediate diagnosis of the cause of bleeding, as the initial treatment is the same no matter what the source. There are three main groups of conditions to be considered in the differential diagnosis. The first group is composed of cases of intrinsic gastroduodenal lesions, mainly peptic ulcer and gastric carcinoma. Peptic ulcers in various situations cause hematemesis in more than seventy-five per cent of cases, while in about twelve per cent gastric carcinoma caused the hemorrhage. With the addition of inflammatory and shallow ulcerative mucosal lesions in the stomach and duodenum and some less frequent types of disease, this group of intrinsic gastroduodenal lesions contains ninety per cent of all cases of hematemesis observed at the Mayo Clinic.

The second group, which comprises five per cent of the total cases of hematemesis, consists of cases of hepatic cirrhosis and splenic anemia with rupture of esophageal or gastric varices.

The third group comprises the remaining five per cent and includes cases of hemorrhagic diseases, cholecystitis, and other less frequent conditions.

The history which the patient gives is very important in the differential diagnosis. If there have been recurrent episodes of epigastric pain with an

ulcer type of dyspepsia, the diagnosis of bleeding peptic ulcer is practically assured, although gastric carcinoma can imitate this closely.

The physical findings are not of great value in the majority of cases, although they occasionally may be diagnostic. An epigastric mass, with or without palpable supraclavicular nodes or implants on the rectal shelf strongly suggest the presence of a gastric carcinoma. If the liver is firm, hepatic cirrhosis may be suspected. If the spleen is also moderately enlarged, supportive evidence is furnished for such a diagnosis. However, if the spleen is considerably or markedly enlarged, splenic anemia or a form of hemorrhagic disease of the blood is more probable. The presence of bleeding gums, purpuric spots, or hematuria is further evidence of hemorrhagic disease.

X-ray examination and the history of dyspepsia are two most important factors in the diagnosis of intrinsic gastroduodenal lesions. The situation of the lesion may be demonstrated and a differential diagnosis between ulcer and carcinoma made. Occasionally varices of the esophagus can be demonstrated.

Bleeding, which is one of the most common complications of ulcer, occurs in about twenty per cent of cases. It is always an indication of activity of the ulcer and is often, but not always, preceded by other evidence of activity, such as the appearance or increase of pain or dyspepsia. Three types of vessels which may rupture to produce the bleeding are described. Hemorrhage is apparently self limited in many of these cases, since recovery often occurs without medical assistance.

Exciting factors which tend to produce activity of the ulcer and promote bleeding may be: unusual physical exertion, infections, dietary indiscretions, abuse of alcohol, fatigue and nervous strain.

Patients are occasionally seen in mild shock, with a clinical picture of hypotension, tachycardia, and cold extremities. However, the presence of shock does not necessarily indicate that a severe hemorrhage has occurred. Occasionally patients enter the hospital for a short time after vomiting blood, and shock may be attributable to the rapidity of loss of blood rather than to its amount.

Treatment was medical at the outset in all cases. Medical treatment alone was carried out in five of the ten cases of ulcer with recent hemorrhage. The average stay in hospital was twenty days for these five patients. The average length of time between admission and the passage of the first stool which gave a negative test for occult blood was ten and one-half days. Six patients with peptic ulcer were operated on for the following reasons: Occurrence of repeated hemorrhage; the presence of other complications, such as penetration, obstruction or both; the presence of a gastric lesion stimulating carcinoma of the stomach on x-ray examination in one case, and the persistence of bleeding while under medical treatment at the clinic in one case.

The importance of inflammatory and small mucosal lesions in producing severe bleeding should be emphasized. Many cases with duodenitis will bleed and yet at operation the only discoverable source of bleeding will be some petechiae in the region of the stomach.

The most important factor in determining the type of immediate treatment to be used is the presence or absence of shock. If shock is present, elevate the foot of the bed, give adequate warmth, large doses of sedatives, administration of fluid and blood intravenously, and whatever stimulants are necessary. In such cases, they believe, local

treatment of the stomach is advisable if it is advisable at any time. This consists in lavage of the stomach with ice water and leaving in the stomach, after a lavage, fifteen to thirty cc. of one to one thousand solution of adrenalin chloride. Intramuscular injection of whole blood and anti-coagulants, vitamine C, and snake venom, as well as other substances, have also been advocated under such circumstances.

It has been the practice of these gentlemen to place the patient in bed immediately and to administer a large dose of morphine and atrophine. They have purposely avoided the intravenous administration of fluids depending in some cases on rectal, but in most cases on subcutaneous administration of two thousand cc. or more daily. Large doses of sedatives, particularly those of the barbiturate group, have been daily administered by rectum to keep the patient quiet. Rinsing the mouth with ice water or holding in the mouth chips of ice has been permitted, but local treatment of the stomach such as lavage or administration of so-called anti-coagulants by mouth has not been practiced. Two or three days after bleeding has apparently stopped small sips of water are given at frequent intervals. This is gradually increased and after two or three days patient is put on a modified Sippy type of medical program. Immediate transfusion was avoided in all except one case in which it was given on the third or fourth day because of the severity of the anemia.

The particular advantage of this routine, they believe, is that administration of fluids subcutaneously does not disturb in any way the gastrointestinal tract and permits the gradual absorption of fluid into the cardiovascular system, thereby preventing any sudden change in blood pressure and pulse rate, such as may occur following the intravenous administration of fluids, which possibly may lead to further bleeding. The use of sedatives in fairly large doses rectally is advantageous for maintaining the patient in a drowsy state for several days, thus allaying such changes in blood pressure, apprehension, excessive movements, and reducing the consciousness of thirst. Under such circumstances it seems reasonable that gastric secretion and peristalsis would also be at minimal levels. When fluid is first administered by mouth, it is given as has been said, frequently, but in small quantities to avoid gastric distention.

"In this series of patients in the five cases of ulcer treated by medical means only, the average stay in the hospital was twenty days and the average length of time between admission and the first stool which gave a negative reaction for occult blood was ten and a half days."

Feeding of patients who have had profuse gastro-intestinal bleeding has been advocated by some men such as Meulengracht, of Copenhagen. He feels that this is more desirable than is starvation. He has recently reported his experience with this type of treatment in two hundred fifty-one cases of bleeding gastric and duodenal ulcer. Death occurred in only three cases, a mortality of 1.5 per cent, which compares very favorably with a mortality of 7.9 among two hundred eighty-nine patients with bleeding being treated under the method of starvation during 1923 to 1932 by Christiansen in Copenhagen. These results suggest that perhaps in some cases of bleeding peptic ulcer such conservative treatment as has been advocated is not necessary and possibly detrimental especially after the third or fourth day. Both Meulengracht and the men at the Mayo Clinic have come to the conclusion that in many cases bleeding from peptic ulcer is self limited. The type of treatment employed may be unimportant

since by the time the patient enters the hospital his bleeding may be practically at an end. It would seem that it takes about ten and a half days after bleeding has stopped for the blood to be completely evacuated from the digestive tract.

That many cases of gross bleeding are not of serious nature is emphasized by the observation of Eusterman that many patients, following hemorrhage, continue in their daily routine without unfavorable results. However, it is impossible to determine, at the time of admission into the hospital, which cases of bleeding will terminate fatally. The authors conclude that the problem of treatment of gastro-intestinal hemorrhage is far from being solved.

LeRoy D. Long.

Chronic Hypochromic Anemia in Women. By Laman A. Gray and M. M. Wintrobe, Baltimore, Md. *American Journal of Obstetrics and Gynecology*, January, 1936, Page 3.

This is a study of forty patients with hypochromic microcytic anemia of obscure origin (Idiopathic hypochromic anemia), studied particularly from the gynecological standpoint.

Principally because of menorrhagia, there was evidence of excessive demand of hemoglobin formation in a total of thirty-one cases (77.5 per cent).

Achlorhydria was found in twenty-five cases and hypochlorhydria in seven more, making a total of thirty-two instances (eighty-four per cent of those examined) in which some evidence of faulty alimentary function was found.

The diet was poor in foods known for their hemoglobin-building properties in twenty-five patients.

In a discussion of the etiology of this anemia it is concluded that it is usually the result of the operation of one or all of three factors, namely faulty alimentary function, defective diet, and excessive demands for hemoglobin.

Faulty alimentary function probably impairs absorption of hemoglobin-building materials in the diet. A diet which is low in such foods contributes to the relative deficiency. It is felt that in most individuals these two factors alone are not great enough to lead to anemia, but moderately increased demands for hemoglobin, and even the requirements of normal menstruation in some women, precipitate the anemia.

The value of large doses of iron, correction of diet and gynecologic therapy directed toward reduction of blood loss is discussed.

Relapses were found to be common in this type of anemia and felt to be due in most instances to persistence of increased demands for hemoglobin. Relapses may often be prevented by checking the excessive requirements, that is, excessive blood loss.

Wendell Long.

A New Treatment of Indolent Ulcer (Un Nouveau Traitement des Plaies Atones). By Gabriel Lafresniere, l'Hopital Saint-Luc, Montreal. *L'Union Medicale du Canada*, February, 1936.

The treatment advocated is the application of forty per cent glucose solution in normal saline, associated, in certain cases, with the injection of about ten units of insulin twice a day. The insulin is not to be injected into the ulcer, of course, but given in the ordinary way. The statement is made that the method has not heretofore been published.

Credit is given to M. Boucher, chief of the medical service in the hospital where the author works, for applying the treatment to indolent ulcers gen-

erally, but Boucher received inspiration from the celebrated radio-therapist, M. Regaud, of Paris. Regaud tried a dressing of forty per cent glucose solution one day in a case of cancerous ulceration of the cervix. There was immediate cessation of offensive discharge, and the ulcerations themselves were favorably influenced.

The author reports four cases, in two of which insulin, ten units twice daily, was employed. Quoting the author: "Here insulin plays the role of fixator of the glucose and permits better assimilation of sugar by favoring the metabolism of carbohydrates."

There is a reference to an article by Barral, of Lyons, in *Paris Medical*, July, 1934, about the use of insulin for the purpose of promoting healing of indolent ulcers. Barral reported that insulin produced rapid healing if the patient had sugar freely, either by mouth or in glucose solution intravenously. Without sugar in some form, insulin was not of demonstrable service. While Barral apparently believed that insulin was of prime importance, it appears that the experiences of the author and his associates, and of Regaud before them, indicate the distinct usefulness of the local application of glucose in solution, for in some cases the ulcers improved without insulin.

Here are synopses of the case reports:

1. A woman of forty-eight. Grave cardio-vascular disease, with extreme oedema of extremities for the relief of which there were many scarifications. When these were healing, there was much itching. Scratching resulted in infection and the development of an ulcer nine cm. in diameter on one leg. After other ineffective treatment, the ulcer was dressed with forty per cent glucose solution, and ten units of insulin given twice a day. Rapid healing, notwithstanding poor cardio-vascular apparatus.

2. Man of thirty-five. Pernicious anemia. An enormous ulcer in the sacral region. General condition on admission extremely bad. Application of forty per cent glucose solution improved condition of ulcer, notwithstanding patient succumbed to the anemia within a few weeks.

3. Man of seventy. Large ulcer on one leg and opposite foot. Entered hospital because of active pulmonary congestion ('congestion pulmonaire active'). Glucose solution, forty per cent, on ulcers. Rapid improvement, ulcers reduced to half original extent when patient was transferred to another institution.

4. Woman of sixty-one. Ulcer 7 cm. in diameter on one leg, producing much pain. Hyperglycemia, but no glycosuria. Ulcer dressed with forty per cent glucose solution. Insulin, ten units twice daily. Rapid and complete healing.

COMMENT: This new treatment of indolent ulcers appears to be a rational and logical procedure. We are now testing it out in the case of a patient in hospital, and we will probably make a report concerning the method in the near future.

LeRoy Long.

Retropharyngeal Abscess (L'Abces Retro-Pharyngien). By A. Aubry. *La Presse Medicale*, November 6, 1935.

Referring to the investigations of Truffert and Vieira, abscesses in the retropharyngeal space are divided into three types as follows:

1. The most common type is in the oro-pharyngeal region.

2. A second type is situated above a horizontal line through the soft palate. It is rare.

3. A third type is in an inferior position, and involves the pharynx in close relation with the larynx.

The first and most common type is found almost exclusively in the infant under two years of age, and is produced by an inflammation of the ganglia in the retropharyngeal space, associated with an acute rhinitis or adenoiditis. In this type, the functional signs are dysphagia, always intense; later dyspnoea and modified voice like the quacking of a duck (*voix de canard*). The physical examination reveals a red elevation (*voussure*) of posterior pharyngeal wall, with fluctuation, determined by touch. The general symptoms and signs are those found with a pyogenic infection—fever, leucocytosis, etc.

The prognosis should be guarded. There is danger of suffocation; danger, too, in connection with toxemia and in connection with production of broncho-pneumonia by aspiration of septic material into the respiratory tract.

The treatment is incision and drainage, the incision being made through the elevated area on posterior pharyngeal wall, with the child in the Rose position—that is, with the head very low so that the recovered material will gravitate toward the head. The employment of an aspirator is advised so that the pus can be quickly and efficiently removed from the oro-pharynx.

The second type of abscess—that is, abscess in a superior position—is also found in infants, and is caused by the same pathological processes as in the first, or more common type. In this second type, the symptoms and signs are indicative of nasal obstruction. The dysphagia is not so pronounced, but there is great modification of the cry and the voice. An inspection shows that the oropharynx is comparatively free, but there is evidence of a collection behind the elevated soft palate. The prognosis is less grave than in the first type. The treatment is the same.

As indicated above, retropharyngeal abscess in the inferior position is located in close relation with the larynx. The author speaks of two subtypes: (a) An abscess just above the level of the cricoid cartilage (*sus-cricoidien*). (b) An abscess between the cricoid and the oesophagus (*cricooesophagien*).

These abscesses about the extreme lower end of the pharynx are found in both children and adults, and are usually due to an infection through a break (*effraction*) in the posterior pharyngeal wall, the break being produced most often by foreign bodies; sometimes due to instrumentation. They are occasionally associated with tuberculosis, syphilis, etc. They occasionally arise in connection with pathology of the cervical spine.

In abscess just above the cricoid, the functional signs are pharyngo-laryngeal in character, the first and most prominent being dysphagia, quickly followed by dyspnoea which is the capital sign, especially in the child. Ordinary inspection gives but little information, but a pharyngoscopic examination shows the elevation of the posterior wall of the lower pharynx.

In the crico-oesophageal position, examination is even more difficult, the only definite information being secured by direct pharyngoscopy. In addition to that, the author directs attention to the value of careful palpation of the neck and of an x-ray examination, as recommended by Hautant and Barclesse.

If it is determined that the abscess is just above the cricoid, the author advises that it should be incised per pharyngoscope.

If it is determined that the abscess is of the crico-oesophageal variety, the abscess should be reached through an external incision just in front of sterno-cleido-mastoid, passing in front of the large vessels, a Mickulicz drain being employed.

COMMENTS: 1. In the surgical treatment of the ordinary retropharyngeal abscess, too much emphasis cannot be placed upon the importance of the Rose position. The head of the patient, nearly always an infant, should be brought over the end of the table and supported in a very dependent position so that the throat may be kept clean without much danger of material being aspirated into the respiratory tract.

2. When there is dyspnoea and other evidences of obstruction, without local evidences of bulging in the oro-pharynx, or bulging behind the elevated palate, it is almost certain that the difficulty is in connection with the extreme lower end of the pharynx, and the contiguous organs—that is, the larynx or oesophagus—and in that case there should be cooperation between the surgeon and a capable laryngologist. LeRoy Long.

ORTHOPAEDIC SURGERY

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On Osteo-arthritis in the Dorsal Intervertebral Joints. A Study in Morbid Anatomy. L. R. Shore. British Journal Surgery, XXII, 833, April, 1935.

This subject is not to be confused with osteo-arthritis of the spine. The paper was written by an anatomist from laboratory specimens with no consideration of the clinical aspects of the subject. Photographs of specimens show that this newly described condition appears in three main regions. In the cervical spine its appearance is thought to be due to weight-bearing in the dorsiflexed cervical vertebrae. A second group appears in the dorso-cervical region, chiefly between the fourth and fifth thoracic vertebrae, localized here chiefly from the use of the upper limbs. The third group is found in the lumbodorsal region, due to the weight-bearing in the joints of the dorsiflexed lumbar column.

Über die Luxation im Talo-Navikulargelenk. (Dislocation of the Astragaloscapoid Joint). Paul Huber. Deutsche Zischr. f. Chir., CCXLIV, 632, 1935.

Dislocation of bones of the foot are rare and only a few are typical. Among these is dislocation in the astragaloscapoid joint. Fifteen cases have been reported in the literature. Consideration of importance in the differential diagnosis are:

1. Dislocation of the scaphoid, in which the scaphoid is entirely loose and displaced.

2. Dislocation in Chopart's joint, in which the joint between the cuboid and os calcis is also involved.

3. Luxatio pedis subtalo, the most frequent of foot dislocations; in addition to the dislocation in the astragaloscapoid joint, there is also present a dislocation between the astragalus and the os calcis.

The dislocation in the astragaloscapoid joint is merely an incomplete luxatio pedis subtalo in which the interosseous ligaments between the astragalus and calcaneum have not been torn. From a practical viewpoint, however, it is better to consider the dislocation in the astragaloscapoid

joint separately. Whereas the luxatio pedis subtalo can, as a rule, be reduced easily and is therefore of good prognosis, reduction of the dislocation in the astragaloscapoid joint is frequently very difficult. A review of the literature shows that the results are not very gratifying. There are two reasons for the poor results: (1) The diagnosis is frequently not made correctly; (2) reposition and retention are difficult.

Two cases are reported, in both of which closed reduction failed and open reduction was performed. The dislocation in the astragaloscapoid joint is frequently overlooked because the deformity is relatively mild and the attention is centered more on the accompanying lesions, especially the dislocation of the tibio-astragaloid joint.

INTERNAL MEDICINE

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By HUGH JETER, M.D.

Normal Hematological Studies. Edwin E. Osgood, M.D., Portland, Ore. Archives Internal Medicine, Vol. 56, Page 849, November, 1935.

This paper presents a summary of a series of hematologic studies with commonly used procedures on over five hundred healthy persons, of both sexes, ranging from children to adults. Subjects lived in or near Portland, Oregon, were largely native born and lived below 152.4 meters. Sex differences in values were found only in those pertaining to size of and hemoglobin content of erythrocytes for persons over fourteen. Erythrocyte counts for children (four to thirteen years) averaged 5,000,000 (range 4,200,000 to 5,800,000). At the age of fourteen the counts for the sexes diverged sharply, males over fourteen averaged 5,400,000 (range 4,600,000 to 6,200,000), for females 4,830,000 (range 4,200,000 to 5,400,000). There seems to be no excuse, therefore, for retaining the obsolete values of 4,500,000 for women and 5,000,000 for men.

The hemoglobin for children is lower than that for adults of either sex, averaging 11.92 gm. per hundred cc. (eighty-five per cent; range 10-14 gm. or from seventy to one hundred per cent). At fourteen years the concentration of hemoglobin increases in both sexes but more markedly in boys to values for adults. The average for males over fourteen is 15.84 gm. (one hundred fifteen per cent; range 14-18 gm. or one hundred to one hundred thirty per cent), and for females is 13.91 gm. (one hundred per cent; range 11.5-16 gm. or eighty-five to one hundred fifteen per cent).

The percentage of reticulocytes is the same for persons of both sexes and all the ages included in this study. It bears no relationship with the erythrocyte count, a fact which was not anticipated.

The total and differential leukocyte counts show no significant differences between the sexes at any age but display definite variations for the different age groups. The white cell count is higher in children from four to seven years (average 10,400) than for persons from eight to eighteen (average 8,300) or for adults (average 7,400). The number of segmented neutrophils is lower for persons of all ages than the values usually given and shows a wider variation. This confirms a long-held impression that the values usually given in textbooks are too high.

Disintegrating cells furnish an index to the rate of cell destruction and the various types of such

cells were included in the above counts. The author closes with the observation that the results of his investigation summarized in Table 2 of the work should be used as a basis for interpretation until more extensive data supercedes them. It might be well to note also that Osgood's data are obtained from oxalated blood, which variation from the usual procedure might account for the differences in his data.

The Effect of Drugs in the Production of Agranulocytosis with Particular Reference to Amidopyrine Hypersensitivity. William Damashek and Abraham Colmes. *Journal of Clinical Investigation*, Vol. 15, Page 85, January, 1936.

Four patients were selected from a larger group of twelve cases, all having recovered from agranulocytosis. Eight of the twelve cases had used amidopyrine, which was considered a possible etiological factor. In one arsphenamine, in two dinitrophenol and in one pantopon had been considered the etiological factor. Many etiological factors seemed represented in these cases but the only constant one was that of a drug, administered either alone or in a combination.

The subjects were tested with amidopyrine which was given orally, by scratch test, by patch test and intradermal test. One patient reacted strikingly within ninety minutes to oral administration of ten grains of amidopyrine with clinical and hematological symptoms of agranulocytosis. Two other patients developed moderate leukopenia and clinical reactions. The fourth patient, given five grains of the drug, developed no symptoms.

Numerous reports demonstrate that the use of drugs, particularly amidopyrine, both alone and in combination, is an important cause of agranulocytosis. The widespread use of this drug and the relatively few cases of the disease suggests an idiosyncrasy or hypersensitivity on the part of certain individuals.

Experimental observations seem to offer conclusive evidence of extreme hypersensitivity on the part of certain individuals to amidopyrine and the theory that the drug must be oxidized in the gastro-intestinal tract before it can become toxic is apparently disproved by the fact that aganulocytosis follows intradermal injection of only a few milligrams.

The negative intradermal test with an aqueous solution of amidopyrine as contrasted with the strongly positive tests with a "serumized" solution suggests a possible drug-protein linkage as the basis of the "allergic" or hypersensitive reaction.

These observations together with others suggest that certain drugs may cause suppression (maturation arrest) of granulocyte production.

EYE, EAR, NOSE AND THROAT

Edited by Marvin D. Henley, M.D.
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Thyroid Carcinoma with Metastasis in the Ciliary Body. Orr and Johnstone, Wolverhampton. *The British Journal of Ophthalmology*, November, 1935.

As far as the authors have been able to determine this is the only case reported of a carcinoma of the ciliary body secondary to the thyroid gland. The patient's chief complaint was failing vision, which had been first noticed fourteen days previous to admission to the Wolverhampton and Midland Counties Eye Infirmary. He was a coal

miner, age sixty years. He was admitted to the hospital in May, 1934. Examination showed what appeared to be a sarcoma of the ciliary body on the temporal side. The eye was enucleated the first part of June, 1934. The other eye was normal except for a hypermetropia, which with a correction gave normal vision. The enucleated eye was sent to the laboratory for pathological examination.

The pathologist gave quite an extensive report. Before he made a formal report he suggested looking elsewhere in the body for carcinoma, especially in the alimentary tract. In his report he definitely leaned toward the possibility of this being a primary carcinoma of the ciliary body. The two reasons he gave against this being a secondary growth are: (a) the highly papilliferous nature of the growth is unlike any primary carcinoma seen elsewhere in the body except in the uterus and the ovary, and this patient is a male; (b) the oedematous papilla within the eye, which is almost certainly part of the main mass of the growth, appears to be continuous with the epithelium covering the ciliary processes.

At the end of August of the same year the patient was finally persuaded to return to the hospital for further investigation. The alimentary tract proved to be negative. A lump, the size of a pigeon's egg, was found in the thyroid area of the neck, on the left side. The patient testified that the lump had been there at least eight years and did not give him any trouble. In September this mass was removed and the pathologist's report on it was columnar-celled carcinoma. Microscopic comparison of the cells of the two tumours left no room for doubt that the intra-ocular one was secondary to the carcinoma of the thyroid gland.

Neoplasms of the Oral and Upper Respiratory Tracts Treated by Protracted Roentgen Therapy. William Harris, M.D., New York City. *The American Journal of Roentgenology and Radium Therapy*, October, 1935.

Dr. Henri Coutard's address before the American Roentgen Society of three years ago is discussed. The title of his address at this time was "Roentgen Therapy of Epitheliomas of the Tonsillar Region, Hypopharynx and Larynx." The ensuing discussion of the presentation was varied. Since Coutard himself varied certain factors in the treatment of these tumors, many questioned the fact of a so-called Coutard method of treatment. The answer to these criticisms are: first, certain factors are still uncertain and it is only by trial and study that the optimum conditions can be determined; second, there are variations in individual response which call for a change from any fixed plan; third, Coutard ends his most recent publication with the following remarks: "There exists no fixed method of treatment but a simple clinical treatment for each individual patient and for the special type of tumor."

The author followed the principles of Coutard in dealing with these tumors which were not suitable for radium therapy, for the past three and a half years. He stresses oral hygiene in addition to a complete physical examination before any treatment is inaugurated. He feels that good oral hygiene prevents both local injuries and respiratory complications. This includes blood studies, indicated roentgen examination and biopsy. When it is painful to swallow, nutrition is maintained by high caloric fluids, using the Levin tube if necessary. All cases must have a high fluid intake, using the necessary methods to insure this, such as continuous intravenous drip of glucose,

gastrostomy, etc., as indicated. The patient should be weighed daily. If there has been much loss of blood, transfusion is advisable. In some cases he thinks it is much wiser to delay the treatment until the general physical condition of the patient is improved. Cocaine, nupercaine and anesthesine tablets are used for local pain. If heavy protracted irradiation is to be given, portals larger than 150 sq. cm. are to be avoided. If the disease is widespread, he prefers the use of four fields of 80-150 sq. cm. rather than two large fields. For small lesions in the larynx, he uses two fields extending from the mandible to the clavicle for the first third of the treatment. Subsequent treatments are made progressively smaller. Great care must be taken with each treatment and he recommends the use of compression cones for a higher degree of accuracy.

The treatments are given morning and afternoon, using alternate fields. The dosage if given in thirty days or more is 3,600-4,200 r per field (10x10 cm.). This is a larger total dose than the author used during the first year of his work. The factors are 180 kv. constant potential or 200 kv. pulsating, 3-4 ma. with a filter of 2 mm. Cu plus 2 mm. Al; focal skin distance 50-60 cm. The aim is to deliver 3-5 r a minute. The beginning dose is 75-100 r daily and then if there is no undue reaction after three to four days 200 r (back scattering) is given each of the two fields daily, except Sundays, until the total dosage is given. During the last year he has abandoned the anterior and posterior portals in laryngeal cases.

In his group of intraoral epitheliomas there were twelve cases of squamous epitheliomas which included seven lingual carcinomata and five patients with lesions of the tonsils and soft palate. In this group of twelve cases, two patients are alive without signs of disease for thirty-four months and one for thirteen months. Another patient is still alive after fourteen months of treatment but at present has a necrosis of the mandible which may be malignant. To control extensive intraoral malignancies, local radium therapy and surgical diathermy must be added to the use of external irradiation.

In his second group of fourteen patients with laryngeal carcinoma (extrinsic and intrinsic) good palliation was obtained. A discussion by Dr. William H. Meyer, of New York City, is appended.

Chronic Tonsillitis in the Adult. Hunnicutt, Jr., Sternstein and MacMahon, Boston. Archives of Otolaryngology, December, 1935.

There is a variety of opinions as to what constitutes clinically chronic tonsillitis. The effect of the infection on certain systemic diseases as well as the upper respiratory tract and the subsequent course of the interrelated disease after removal of the tonsils is equally debatable. An attempt was made by the author and associates to clarify this situation somewhat by taking twenty-five patients with a diagnosis of chronic tonsillitis and making a clinical, bacteriologic and pathologic study of them. Tonsillectomy had been recommended in these consecutive cases. The diagnosis of chronic tonsillitis was made on one or more of the following points: repeated attacks of sore throat, with or without systemic reaction; a history of frequent or periodic sore throat in patients with disease commonly attributed to focal infection, such as various types of arthritis, muscular rheumatism and conditions presumably of toxic origin; and the presence of capillary infection in the faucial pillars and tonsils, together with the appearance of a

purulent tonsillar exudate. Patients with infected teeth or sinuses were not included in this group.

In the group studied there were ten men and fifteen women; age from twenty to fifty-seven years; twenty-four gave history of long-standing frequent and periodic sore throats with eleven of them having intermittent attacks of acute tonsillitis; twenty of them had associated head colds; in eight there was history of cervical lymphadenitis; seven patients complained of productive cough and two of a dry, non-productive cough; in seven there had been disorders of the ears, three with chronic progressive deafness and four with tinnitus; and fourteen gave history of one or more of the associated systemic diseases. Size, appearance of the surface and the exudate, were the points considered in the clinical examination of the tonsils. It was found that there was not any constant relationship between the clinical findings and the clinical history.

In the bacteriologic studies the cultures were made of material taken from three sites: the surface of the tonsils before operation; the depths of the enucleated tonsils directly following removal, by searing and puncturing the surface; and the tonsillar fossa after healing. The results showed micrococcus catarrhalis to be the organism most frequently found while staphylococci and non-hemolytic streptococci were the next in frequency, respectively. The organisms of greatest preponderance in the tonsil had no constant relation to the gross appearance of the tonsil nor to the clinical signs and symptoms.

For the control for the series of twenty-five patients, tonsils were removed at autopsy from adults who had had no recent clinical signs or symptoms of infected tonsils. The pathological examination of the series of twenty-five showed a variety of findings but no more variable than that found in the control group. There was one case of rheumatic fever following scarlet fever. With this exception, the histologic changes did not bear any definite relationship to the bacterial flora or to the clinical signs and symptoms. The author says: "The problem has not been to prove that all cases in which there is a clinical diagnosis of chronic tonsillitis warrant a similar histologic diagnosis but rather to demonstrate the variety of changes which may be found in the tonsil of the patient whose condition is diagnosed in the clinic as chronic tonsillitis."

Subjective Studies of the Blind Spot and Visual Fields. Edward Jackson, M.D., Denver. The American Journal of Ophthalmology, January, 1936.

In an original paper which he presented before the American Ophthalmological Society at Hot Springs, Virginia, in 1935, Dr. Jackson discusses a subject which many have observed, but about which few, if any, have written. Mariotte over two hundred and fifty years ago called attention to the blind spot. Helmholtz, Wilbrand and other noted observers have investigated and devised various methods for the measurement of the same. Dr. Jackson gives subjective methods of viewing the observer's own blind spots—the size, shape, position in the field of vision, movements, and relation to retinal adaptation, or after-images. He shows that this is of practical importance to the ophthalmologist.

To perceive the blind spots in the visual field one may face the sun, or in the bright sunlight, or at night face a 100-watt electric lamp placed within two feet of the eyes, with the eyes closed. He relates that this experiment has been performed by

many under his supervision and that no one has failed to recognize the blind spots when the experiment was intelligently performed. The conditions necessary are: the light must be bright enough, the illumination must be nearly uniform throughout the field, the retinas must be light-adapted, and a few seconds must be allowed for the scotomas to appear. These spots seem to be almost constantly moving in the field of vision. The conjugate relationship differentiates them from other scotomas and from shadows cast by vitreous opacities on the retina—the common muscae volitantes.

Dr. Jackson says: "The 'seeing' of our own 'blind spots' constitutes a paradox that well illustrates the cerebral character of all our seeing. In the mass of sensory cells that constitute the visual centers there is no vacancy—no break—in the continuity of cells prepared to receive impressions made by the visual apparatus. There are cells in position to receive all possible impressions made on the retina, and each is correlated and coordinated to indicate the direction from which light comes, or does not come, to make an impression. It is this permanent coordination for orientation that enables us to see the break in the visual field caused by our own blind spots."

Two incidents are related which occurred during the past year in which two patients came to him complaining of "spots before their eyes." It proved that they had only perceived their own blind spots, and that when a full explanation had been made to them, they experienced no further difficulty.

DERMATOLOGY, RADIUM AND X-RAY THERAPY

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Radiation Therapy in Carcinoma of the Bronchus.
Samuel M. Baum, M.D. Radiology, Vol. 23, No. 4,
October, 1934, 466-471.

In reviewing the literature on this subject the author noted that there was a consensus of opinion among various writers to the following effect:

Malignancy of the lung is not frequent but the incidence is on the increase. It has an insidious beginning and probably has existed some time before there is any clinical or radiographic evidence discovered. The majority of authors recommend surgery as the only method of treatment. However, only a few regard surgery as holding out any chance for cure. There is a mortality of not less than fifty per cent. Most authors condemn radiation therapy for this purpose, but in three essays radiation is recommended and case reports of it are favorable. The author reports one case of his own in which a biopsy revealed squamous cell carcinoma of the bronchus. The treatment consisted of deep x-ray therapy given in small doses over a long period of time. Three series of treatments were given consisting of two weeks each, in all a total of 10,106 r were given to three portals, two anterior and one posterior to the affected part. Fifteen months after the first series of x-ray treatment was given it was stated that "it is justifiable to deduce from these cells that the major portion of the tumor has completely disappeared and there now remains only some productive changes in the bronchial wall."

Leddy and Vinson report ten cases treated by radiotherapy who are living and well from fifteen months to four years after the diagnosis. Sher-

man reports four cases symptomatically free of carcinoma and two clinically well showing some evidence of lung tumor by x-ray. The authors conclude in their final paragraph as follows:

"There would seem to be justification for the conclusion that irradiation is to be preferred in the treatment of lung carcinoma as it offers greater possibility of cure in the early stages for the following reasons: (1) indications for its use are much less restricted than those in surgery; (2) in advanced cases beyond hope of cure by any means it affords a greater degree of palliation than can otherwise be obtained."

Protracted External Irradiation in the Treatment of Carcinoma of the Mouth and Throat, A Comparison Between X-Rays, Five-Gram Pack, and Small Radium Pack. Ira I. Kaplan, M.D., Milton Friedman, M.D., Rieva Rosh, M.D., and Carl B. Braestrup, B.Sc. Radiology, Vol. XXIII, No. 3, September, 1934, 339-354.

Even though the authors state at the outset in this article that it is a preliminary report, it is nevertheless quite valuable and one which is greatly appreciated by radiotherapists. On account of several opinions as to the most effective method of radiotherapy in carcinoma involving the oral cavity, the pharynx and larynx, the essayists have set about to make some definite observations in their own cases by applying technic in three different ways; these methods are as follows: x-rays, large radium packs and small radium packs. In the case of x-rays the factors are 200 kv., 4 ma. current, 2 mm. cu. and 1 mm. al. filtration at 60 cm. distance with a portal of 10x15 cm. One area on each side of the involved part is treated daily with a dose varying from 200 to 250 r, given over a period of twenty-one to thirty days, a total dose being 6800 to 8800 r. In the case of the large radium pack this is a five-gram pack which has a filtration of 0.5 mm. platinum and 5 mm. lead, being equivalent to 6 mm. of lead. The distance from the skin to the radium is 6 cm., the portal 8x10 cm.; the daily dose ranges from 5000 to 7500 mg. hours to one area. It is given over a period of twenty-five to thirty-five days; a total dose of 50,000 to 60,000 mg. hours is given when two areas are treated; a total dose of 35,000 to 45,000 mg. hours when three areas are treated; a grand total of from 100,000 to 135,000 mg. hours. When the treatment is by the last method, that is, the small radium pack, 100 mg. of radium are used with 0.5 mm. platinum which is equivalent to 5 mm. lead. The distance is 6 cm., the portal 6x8 cm., the daily dose 2400 mg. hours to one area only, duration of the treatment from twenty-one to twenty-five days, and a total dose is from 50,000 to 60,000 mg. hours to one area. Attention is called to the time required in the treatment with these various modalities. It is specifically stated that it is necessary to adhere closely to the time given in order to obtain best results. In so doing, it is noted that there is an epithelitis produced in the mucosa within a certain period of time which is immediately followed by an epidermitis.

In order to get a full appreciation of this article, it is necessary to read the original. It goes into extensive detail in regard to the technic and the various reactions. After all, however, the most important value of this article is that which is summed up in the conclusion. Among these conclusions there appears this statement: "The small 100-mgm. radium pack is an efficient therapeutic medium which can closely rival the large 4- and 5-gram packs." A portion of another paragraph

makes the following statement: "In comparing the effect of the x-rays with the gamma rays (5-gram radium pack), we were surprised to note the similarity in action of these two rays on the skin and mucosa. The number of cases are too few to permit comparison of their effects on the tumor but to date there appears to be no appreciable difference."

The Treatment of Cancer of the Mouth by Surface and Interstitial Irradiation. George E. Taylor, M.D. *Radiology*, Vol. 23, No. 4, October, 1934, 472-475.

At the outset of this article a general principle is laid down in which it is stated that a technic must be used which will destroy or remove all of the cancer, and yet avoid as much as possible damage of the structure to the other tissue; hence, it is necessary that the technician not be limited to one form of treatment. To this end the use of surface applications of radium, external applications of radium packs, deep x-ray therapy and endothermic coagulation is necessary. In treating cancer of the mouth the author begins by the use of deep x-ray therapy or radium packs externally. Soon thereafter, however, surface applications of radium are used in the mouth. This is done alternately with the external applications. In using surface applications, radium is used which is covered by 2 mm. of platinum and 1 mm. copper. This is increased if space permits. All sides of the tumor are treated in order that cross fire radiation may be obtained, and from six to ten erythema doses, including the external irradiation, are used. In addition to this, interstitial irradiation with platinum needles containing from 1 to 3 mg. are used. Taylor then goes into some detail, explaining the nature of the platinum needles as regards filtration, quality, and concentration of the radium and the time used. He also describes his method for using radium packs, stating that he uses from 30,000 to 50,000 mg. hours over a period of from three to four weeks' time. Several tables are shown which were prepared by his associate in which results in 316 cases of epitheliomata of the lip are given. The percentage of recoveries, considering those lost trace of, etc., is eighty-five per cent.

Factors Influencing the Determination of Radiosensitivity of Cancers of the Oral Cavity and Upper Respiratory Tracts. Arthur Purdy Stout, M.D. *American Journal of Roentgenology and Radium Therapy*, Vol. 33, No. 3, March, 1935, 327-331.

So many different ideas prevail as to the factors which influence the radiosensitivity of tumors which cause the authors to make a study of these factors with the following results:

It must be said in the first place that the cancers under consideration are located principally in the mouth, nasal and laryngeal cavities involving both extrinsic and intrinsic ones. Where there is an infection, invasion of bone and cartilage, or where there is deep infiltration or syphilis there is greater resistance than when these things are not present; smallness of size and leukoplakia being present favors radiosensitivity. The location of the lesion from an anatomical standpoint also favors the sensitivity of the lesion; for example, when the lesion is located on the vocal cords, nasal cavity, antrum, cheek or gum, the tumor is comparatively resistant. On the contrary, in the case of intrinsic laryngeal, nasopharyngeal, tongue, lower mouth and lower lip, tumors have a relatively higher percentage of radiosensitivity. From the standpoint of microscopic observation it may be said that the indications of radioresistance are: secretion of

musin, nerve sheath invasion, calcification, formation of glands, melanin, collagen fiber and adult structures as present in fibrosarcoma. In the case of squamous cell epithelioma, considerable keratin, many prickle cell processes and many pearls indicate resistance. Per contra, sensitivity is indicated by lympho-epithelioma, lympho-sarcoma and, in the case of squamous cell epithelioma, complete or partial absence of keratin, pearls and intercellular bridges. Stout found that radiosensitivity was relatively uninfluenced by the presence or absence of metastasis, papillary tumors, unusual types of cells and mitoses.

Histologic Structure of Carcinoma of the Cervix Uteri and Its Relation to Radiosensitivity. Charles C. Norris, M.D. *American Journal of Roentgenology and Radium Therapy*, Vol. 33, No. 3, March, 1935, 332-337.

The author has very concisely put down the conclusions of the article in such a clear manner that further comment is unnecessary. They are of sufficient value to give them in full detail:

"1. All cervical carcinomas are quite radiosensitive.

"2. As compared to many other tumors, the difference in sensitivity between the most radiosensitive types of carcinoma of the cervix and the more radioresistant is relatively slight.

"3. The fact that the final salvage is small is due not to radioresistance on the part of the tumor, but to the difficulty of securing intensive diffuse irradiation of the entire growth including the metastases.

"4. As compared to many other tumors, all cervical carcinomas are relatively highly malignant.

"5. In cervical carcinoma the radiosensitivity and the malignancy index tend to run more or less parallel.

"6. The greater malignancy probably counterbalances the greater radiosensitivity and in part accounts for the relatively slight differences in the five-year salvage of the different types.

"7. As the normal cervical tissue is capable of withstanding extremely intensive irradiation, and taking into account the relatively high malignancy of all cervical carcinomas, our aim should be to apply as intensive and as diffuse irradiation as possible to all except definitely hopeless cases.

"8. Histologic examination is neither a very practical nor a reliable guide as to either the prognosis or the radiation dosage. It may be of some use in groups, but means little in the individual case.

"9. Papillary tumors are generally more radiosensitive than are those of the infiltrating type."

The Effect of Roentgen Therapy Upon Tumors of the Kidney. Albert E. Bothe, M.D. *American Journal of Roentgenology and Radium Therapy*, Vol. 33, No. 4, April, 1935, 529-536.

On account of the poor prognosis so frequently associated with surgical removal of nephrogenic tumors, it has been found that the radiation of such lesions prior to operation is of distinct value. This value varies with the type of histological structure. Bothe enumerates this variation as follows:

In mixed tumors the radiosensitivity is the greatest. The sarcomatous cells in mixed tumors are the radiosensitive element; whereas, the epithelial cells in such tumors are apparently radioresistant. One of the chief values in pre-operative radiation of nephrogenic tumors is the reduction

in bulk or size of the kidney. This reduction is dependent upon the embryonal tissue present. Even though malignant cells can be reduced by radiation, this does not kill all of them; therefore, when the greatest amount of reduction has been obtained, surgical procedure should be immediately carried out.

○

Fundamental, Reciprocal Relationship Between Myeloid and Lymphoid Tissues: Its Recognition, Nature and Importance as Revealed by Experimental and Clinical Studies

B. K. Wiseman, C. A. Doan and L. A. Erf, Columbus, Ohio (Journal A. M. A., February 22, 1936), bring together and organize a number of observations, both experimental and clinical, which have been accumulated in recent years in their laboratory from a widely divergent series of investigations and which, when taken together, constitute a body of fact pointing strongly toward the existence of a fundamental physiologic reciprocal relationship between myeloid and lymphoid tissues. The importance of this concept to certain clinical blood dyscrasias is emphasized. The evidence cited strongly suggests the existence of a definite physiologic equilibrium between myeloid and lymphatic tissues. There would also seem to be some ground for the belief that physiologic and pathologic disturbances of this balance may lead to definite blood anomalies. While the evidence is only suggestive and not conclusive that lymphoid imbalance may play an etiologic part in the production of a specific type (not all types) of "aplastic" anemia, the authors nevertheless feel that the interpretation of the facts observed justify further consideration, study and experiment. There would seem to be only two possible explanations for the reciprocal phenomena observed. First may be suggested the existence of a single substance (molecule) having stimulatory properties in one location and inhibitory effects in another location for the common stem cell. This hypothesis would seem to be decidedly contrary to both experience and logic. Modern beliefs relating to blood formation indicate that, at least with respect to the white blood cells, all stem cells are identical in potency. That they differentiate along dissimilar lines is the result of different environmental influences, different stimuli, or both. This explanation of the physiology of blood formation makes it extremely difficult to conceive of a single substance that could affect the same cell so differently with only the added help of a conditioning environment. The only other obvious explanation that could adequately explain the facts of reciprocal response is integrated with the concept of a physiologic cellular equilibrium. This hypothesis entails the corollary that any considerable increase in the volume of either tissue must result in a corresponding diminution in the volume of the other. The experimental and clinical observations available confirm this theoretical explanation and no facts at present contradict it. Possibly there is only a limited and fixed amount of maturative substance essential for maturation present in the body at any one time, and a diversion of the material to one or the other of the actively growing tissues results in a deficit in supply to the other, the latter therefore undergoing involution. Possibly, there is a specific inhibitory influence of each tissue on the other. Endogenous or exogenous stimuli, toxins and similar substances specific for each cell type are undoubtedly important in disturbing the physiologic equilibrium. Mechanical and physical factors may definitely alter the normal balance of the cells. Fundamentally, two distinct types of clinical disease are theoretically possible as a result of a disturbance

in this normal relationship: one in which the disturbing factor is secondary to an abnormal state elsewhere (example, infectious mononucleosis), and, second, a type in which the disturbance is intrinsic and due to a failure of physiologic control ("aplastic" anemia). The phenomena of reciprocal relationships of the blood cells must be considered henceforth in the interpretation (1) of the mechanism of cellular reactions, (2) of the microscopic changes in the blood forming tissues and (3) of the peripheral blood elements, not only in disease states in general but more especially in the blood dyscrasias.

○

Hysterography as an Aid in Diagnosis of Abdominal Pregnancy

J. P. Greenhill, Chicago (Journal A. M. A., February 22, 1936), believes that when a diagnosis of abdominal pregnancy seems to be the correct one, injection of iodized oil into the uterus is not only a simple and relatively harmless procedure, but presents absolute evidence of the presence of a pregnancy outside the uterine cavity. A roentgenogram taken of an abdominal pregnancy without previous injection of an opaque substance into the uterus frequently shows a dead or a live fetus in an abnormal location but it does not prove that the fetus is outside the uterus. When a roentgenogram shows a fetus that has collapsed skull and/or other evidence of fetal death and extra-uterine pregnancy is suspected, there is surely no harm in injecting iodized oil into the uterine cavity to decide whether or not the fetus is inside or outside the uterus. Likewise in cases in which a fetus is dead and repeated attempts to induce labor by medicinal and mechanical means, such as the introduction of gauze, and bougies, fail to bring about expulsion of the child, it is advisable to perform hysterography. Occasionally one may be surprised to find an abdominal gestation. However, if the child is alive, together with doubt in the diagnosis, it might be dangerous to inject solutions into the uterus. A case of abdominal pregnancy, probably ovarian in origin, is reported in order to emphasize that a diagnosis of abdominal pregnancy can be made with certainty by injecting iodized oil into the uterine cavity.

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Food Poisoning From Ice Cream on Ships

The occurrence of at least four outbreaks of food poisoning, epidemiologically traceable to ice cream containing nuts, occurring aboard an ocean liner sailing from the port of San Francisco, led to an investigation of the circumstances surrounding the manufacture, storage, handling and serving of ice cream aboard the vessel with J. C. Geiger, A. B. Crowley and J. P. Gray, San Francisco (Journal A. M. A., December 14, 1935), present. Investigations made by an observer-inspector, aboard for a regular trip revealed many possibilities of contamination of the milk food product, which was made aboard ship. The correction of certain undesirable practices and the use of ice cream from shoreside sources have resulted in no recurrence of food poisoning aboard this vessel. Since the lower temperatures used in ordinary refrigeration and ice cream freezing have only growth-inhibiting and not bacteria-destroying power, and since milk and milk food products, because of their inherent character, offer excellent bacteria culture medium possibilities, ice cream and other milk food products should be subject to rigorous standards in production, processing and marketing, with the provision of every reasonable safeguard to the public health.

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THE JOURNAL

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VOLUME XXIX

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Number 4

SOCIETY AND SCIENTIFIC MEDICINE*

GEORGE R. OSBORN, M.D.

TULSA

Members and Friends of the Oklahoma State Medical Association:

All here assembled tonight have an interest in organized medicine—in its trials, its problems and its accomplishments. Your presence bespeaks that interest and does honor to the medical profession of Oklahoma and lends the much appreciated encouragement to me and the other officers of this association as we assume our duties and responsibilities.

From the time that man first realized that man did exist, that he was a man, and sensed life, he has had the instinct, the impulse, the desire to preserve his life. The activities of life gave him pleasure. Anything that threatened his life or limited his activities gave him pain and unhappiness. His first primitive efforts to protect and prolong life was the first practice of medicine. Today the purpose of medical practice is just the same but living today entails many different activities.

Evolution brought man up to where he could think and civilization has kept him at it. When man first sensed his ego, he was a free man but the moment that the realization was born in upon his meagre intellect that he was not alone, that there were others of his kind, his perfect liberty was gone, and society was born. Social responsibilities began to conflict with his individualism.

Millions upon millions of years have passed since that day and so infinitely

long has new life been evolving from old, with only the most minute change in each cycle, that what little man today can learn in his three score years and ten empowers him with only a faint conception of what has gone on before and less of what is to come.

Yet, from history and anthropology and deductions from sciences, mankind today struggles to maintain life and to enjoy it, just as the first man did.

The purpose of the primitive medicine man was to serve his fellowman; to heal the sick. He was not a doctor; the title "doctor" was given to the modern medical man when he began to take on apprentices or pupils and teach them to carry on what knowledge he had acquired. The original medicine man's ignorance forced him to rely upon charms, and magic, which he kept secret. If not too many of his patients died and, by his charms, magic, and incantations, he could build up awe and fear in the minds of his ignorant clientele, he was held in reverence and might live to a ripe old age, but on the other hand, if he failed to cure or did not use the right charm, he was not sued for damages, he was decapitated. So we can thank civilization for the commercialism that has evolved from the primitive instinct of possession. It saves our necks.

In ancient times the priest and the physician were one. Today specialization has taken from the priest his medical practice and left the physician very little of his priestliness.

Evolution is slow in making its changes

*President's Address, Annual Meeting, Oklahoma State Medical Association, Enid, April, 1936.

but is constant and unswerving in purpose; viz: the continuation of life in any species and the retention of those physical characteristics essential and best adapted to the environment in which each newborn individual of the species finds itself.

Education or civilization is not constant. We know from history that man has attained to a high state of civilization and learning many times and has fallen or forgotten what he had learned.

Scientific medicine today has attained to a higher degree of proficiency than in any period known to man. Hippocrates, history tells us, is credited with having initiated the separation of the practice of medicine from religion, and for starting the scientific practice of medicine. That is, he used his head, studied his patients and their ailments, and reasoned from cause to effect. He proposed a code of ethics which, although over two thousand years have passed, stands today in every land where scientific medicine is practiced as a classic and a constitution for the laws of behavior for medical men.

What would have been the state or condition of civilized man today had Hippocrates never lived or had he failed to plant so fertile seed in the field of man's activities at that particular time? I wonder!

What might have happened is worthless speculation. What did happen is that medicine has a record of accomplishment, romantic in its experiences and real in its achievements; a record that is a glory to civilized man.

Scientific medicine, universally accepted throughout the civilized world, is known as regular medicine, and its votaries as regular practitioners.

We of the regular medical profession are jealous of the basic principles of ethics and science upon which our so called school of practice is founded.

No school of medical practice based upon a doctrine, a single method of therapeutics, or upon a pseudo philosophy; no sect nor cult, has ever accomplished anything of benefit to society. None such irregulars has ever lived as long nor attained any degree of social significance and responsibility comparable with the

school of regular medicine. It would be a great boon to scientific medicine if the public could be taught to differentiate the regular from the irregular in the practice of medicine. It would reduce the "high cost of medical care" and give security of public esteem to the regular practitioner, and thus free him from the threat of State Medicine.

Organized medicine in the United States has as one of its activities the dissemination of information regarding both regulars and irregulars in practice as well as the exposure of the quack and of fraudulent remedies. The irregular practice of medicine does not affect the progress of scientific medicine to any extent in but one way. It diverts public support, both economic and moral, which society must contribute to any cause or service which is essential to life and health.

Dr. Lewellys F. Barker, of John Hopkins, some years ago in a discourse upon *The Irregular Practice of Medicine*,¹ defined irregular practice as "practice that deviates from common rules, that departs from the generally followed course or process of a given time," and pointed out that practice that deviated from commonly accepted rules and in so doing was inferior to regular practice was bad but, if superior in results, it was good and gave as an example of the good and noble irregular the practice which deviates from the conventional by using new methods of therapy and diagnosis that are scientifically based. In this day and age the good irregular soon becomes regular.

It is the bad irregular practice which includes the practice of the charlatan and quack that I had in mind as diverting the public support which rightfully belongs to regular scientific medicine.

In spite of the marked advancements made in all phases of scientific medicine and its universal recognition by civilized society, there are problems of serious import to be solved. Problems that involve not alone the present but the future of medicine, and that concern society which medicine serves. Will we solve these problems correctly?

Apropos of the statement just made and the question raised, also that I may waive claim to originality of the ideas suggested

therein, permit me to present from Garrison's History of Medicine a gem of thought attributed to Sir Michael Foster: "For indeed it is one of the lessons of the history of science that each age steps on the shoulders of the ages which have gone before. The value of each age is not its own, but is in part, in large part, a debt to its forerunners. And this age of ours, if, like its predecessors, it can boast of something of which it is proud, would, could it read the future, doubtless find much also of which it would be ashamed."

When our Chief Executive, in his first broadcast after inauguration, said, "I don't know where we're going, but we are on our way," he, I believe, sensed deeply his responsibilities, and was thinking of the complexity of social forces that were his to guide. However, by that statement, he expressed the state of mind of society in general.

Like a hilarious joyrider, the American public had been speeding along, propelled by the power of applied sciences upon a well paved financial roadbed. Suddenly the pavement ended.

It is obvious that the stress of the times has helped to bring the question of the cost of medical care into prominence and that some change will have to be made in the system of rendering service. However, the so-called depression came several years after the work and the report of "The Committee on the Cost of Medical Care." Long before that even, free clinics and propaganda in support of compulsory insurance against sickness, and the formation of societies or lodges employing a member physician to render medical service for a small nominal fee became common. And today we have State Medicine knocking at our door.

Social economics has shown that there are two ways of regulating man's activities. One is by laws justly enforced; the other is by education. That is, training in those virtues which underlie correct behavior. The first method limits personal liberty and initiative, the second gives freedom and develops self-reliance. Hence, that axiom of political economy: "The best governed people are the least governed people."

This being true, we must conclude that

a nation of perfect people would need no laws, and to impose laws upon them would weaken their self-reliance and lower their sense of social responsibility. Hence, this cry for State Medicine or laws to control the practice of medicine indicates that the mien or average of individual sense of social responsibility and of self-reliance in the United States has been going down for some time.

As has been stated, or inferred, scientific or regular medicine is an essential unit or part of society, and its individual practitioners must have the same sense of relationship to society in general as any other individual must have. However, he is not accused of lowering his standards of practice. It is acknowledged that the average physician is better trained and better equipped than his predecessors. Vital statistics show that he is lowering the mortality rate for most of man's ailments. He seems to be doing his best. He is rendering more free service to the indigent than ever before. Society is paying more for its other wants, and more for most of its necessities. To reduce the cost of medical care means less service or a decline in quality of service. Organized medicine knows that there is something wrong and various plans for regulating the charges for medical care in proportion to ability to pay are being tried.

No plan can be willingly accepted by the profession which takes from the patient his right to select his physician or directs the kind or amount of service to be rendered. State Medicine and various insurance schemes do that.

I believe it is yet possible to prevent State Medicine from being forced upon the regular medical profession. It is a compliment, however, to regular medicine, that it has been selected to render the service which the advocates of State Medicine propose to control. Regular scientific medicine is not in disrepute, and is not disorganized. Hence, my statement of confidence that State Medicine can be prevented.

Public opinion has been influenced to accept the teachings of organized scientific medicine before, as in the case of public health regulations. It is well within the memory of many here tonight,

when public health laws were considered as infringements on personal liberties and privileges.

Public health work is preventive medicine—one phase of scientific medicine. True, it is largely controlled by the state, but that is as it should be because public health concerns society as a whole, while curative medicine concerns the individual, and his self-reliance should not be weakened nor his individuality taken from him by the state prescribing and paying for his personal treatment.

These things must be taught by organized medicine to the public and by the physician to his patients. The average individual pays little thought to public health matters until an epidemic threatens; nor to his personal health until he has a pain; so it has always been the duty of the medical profession to exercise a sort of parental control over the individual patient and direct measures for the protection of the public health. It means a lot of teaching and our responsibility to society is great. Organized medicine assumed that responsibility in the United States sixty-one years ago. The individual practitioner, like any individual, may err or fail to do his duty but an organization such as the American Medical Association, having for its sole purpose the promotion of scientific medicine, and guided by the ethical principles which have stood the test since the time of Hippocrates without having compromised itself commercially or politically, will not err now; it will continue to function as one of the strongest and most beneficent social agencies in America.

It is admitted that individual members of the medical profession may err. We must acknowledge in the spirit of fairness that many of them do err. Commercialism or greed has always been a disease of the professions. Organized medicine must cure itself. It is awake to the fact that there are irregulars within its ranks and, by raising the moral and educational standards of medical students, it has reduced the number to some extent.

I think it can be said of recruits to the ranks of regular medicine that they are of a higher type than formerly but there are contaminating influences from outside the

profession that lower their morale. In the lean years of establishing a practice, temptations to violate the Hippocratic oath are sometimes overwhelming and they fall.

The quack and cultist and unscientific practitioner, whose only "stock in trade" is advertising in newspapers and by magazine articles, are pernicious and criminal competitors for practice that would otherwise fall to scientific practitioners.

If society recognizes that scientific medicine is right, and it does, then it should demand that those who practice medicine or claim to heal the sick, should have knowledge of the basic sciences of medicine.

Such a demand in the form of a basic science law, and its honest enforcement, could eliminate this racket which is more widespread and pernicious than ever practiced by the so-called underworld. A basic science law would save many lives and prevent untold suffering. It could do no harm to any practitioner who is honest and honorable for, if such a man knew his shortcomings, he would not want to practice. A basic science law would provide a measure of the capabilities of those who propose to practice medicine.

There are many problems to which members of the regular medical profession must give their individual thought and effort to solve and in so doing fulfill their obligations to society at large and to scientific medicine in particular.

Theodore Roosevelt once said: "Every man owes some of his time to the profession to which he belongs."

I have discussed in a somewhat argumentative manner the question of State Medicine and the problem of regulating the practice of medicine by a basic science law because it seems, that among the many questions that concern organized scientific medicine, these are most vital.

The regular medical profession would be negligent of its duty to society if it failed to resist the former or to support the latter. Society, as a whole, will give little attention to either unless its interest is aroused, and it is being aroused by social reformers of questionable judgment, and scheming politicians of questionable motives. Hence, it is the duty of every mem-

ber of the regular medical profession to put forth every effort he can by righteous argument and instruction to counteract this sinister propaganda.

Effective work is already being done by the American Medical Association and its component state and county units.

Let me repeat: Organized medicine is alert. It is cognizant of its problems. It is efficient and diligent in all its departments, extending to every individual physician the latest in scientific knowledge and equipment. Medical education is being improved through better organization, equipment and the curriculum of medical schools. In fact, medical education

as carried on by organized medicine never stops, and in its research laboratories, hospitals and clinics, it is constantly learning and teaching new scientific facts and principles.

Could society appreciate just a little the centuries of intense study and the constant devotion to service, and comprehend how man, guided and impelled only by the divine principle that was in him, had brought modern medicine out of mystery; could society but faintly sense the majesty of medicine; would society then demand social regulation of medicine?"

Scientific medicine is "law unto itself."

1. Read before the Mississippi Association, St. Louis, October, 13-15, 1921.

Friendship in the Medical Profession*

LOUIS H. RITZHAUPT, M.D.
GUTHRIE

Two years of intimate connections with the affairs of the Oklahoma State Medical Association have intensified my belief that the medical profession of the State must assume obligations of, and direct things pertaining to, the health of the people. The modernization of thought and plans for social security, public health, hospital and medical insurance, and State Medicine must be directed by those who know the needs of such service. However, this power must not be anticipated with the expectation of ulterior gain or personal advancement, but rather for the welfare of every citizen.

To accomplish this great task it is necessary that the doctors of this State be welded together by some strong cohesive power greater than that of professional fraternalism, yet compatible with it.

There is no family circle so strong, no professional group so well established, no State so firmly founded, as to be beyond the reach of utter destruction from animosities and factions. The medical frater-

nity should be composed of persons whose actions and lives leave no question as to their honor, equity, and liberality; who are free from greed, violence, and lust for gold; who have the courage of their convictions.

What could be more delightful, more inspiring, than to have not one, but many people, to whom you could turn with the same absolute confidence as to your inner self, knowing that your hopes and ambitions would be welcomed, and that all those involved would advance together for a common good? We follow too much our own desires and devices, too often we leave undone the little kindnesses that mean so much to our fellowmen. Friendship, sincere and abiding, is the greatest power for unity. Truly friendship has been termed the sweetener of life and the saviour of society, and because it is that by which the world is most blessed and receives most good, it ought ever to be chosen by the worthiest persons, those that can do greatest benefit to each other. Other goals of ambition serve for particular ends, riches for luxury, office for reputation, pleasure for entertainment, even

*Read before the General Meeting, Oklahoma State Medical Association, Enid, April 7, 1936.

health for freedom from pain and the full use of body functions. But true friendship, not cemented by mere material advantages, wishes all of these for his neighbor. Genuine friendships are eternal, unchangeable, leading us to life's higher levels of altruism and sacrifice.

A new order of things is inevitable. It marks the progress of the individual, society, the state and the nation. This change should be carefully wrought in an orderly fashion by men who are capable of analyzing the past and looking to the future. If the change be not brought about in this manner, then strife, contention, persecution, and bloodshed will hold sway, and retrogression, not progress, will result.

Heroic efforts are being made along many lines to stabilize and perpetuate the lives and rights of the people. The government is spending vast sums of money in the restoration and conservation of land as well as to meet the economic needs of the farmer, in supplying cattle, sheep, and horses; also seed, feed and grain. Little consideration is given, however, to the health or the rehabilitation of the men, women and children who constitute the agricultural population. So far all the money spent by the government for public health has been to prevent disease, not to cure it.

Every hamlet has its jail, every city and town its municipal building, every county its courthouse, and every state has a number of penal institutions. Enormous sums of money were spent in their erection and vastly more is needed for their maintenance. The principal use of these places is to discourage crime, to apprehend and punish criminals. Records show that in one year over one-third million people were arrested, and the census of state and federal prisons was over two hundred thousand.

There are in the United States over six thousand registered hospitals with a capacity of more than a million beds which administered to over seven million patients. The greater portion of these hospitals are owned and operated by corporations, religious organizations, or indi-

viduals. Only a few operate at a profit, but all serve the public.

With seven million people treated in hospitals, twice as many were cared for in their homes, many of whom should have had the advantages of hospital care.

In view of this comparison and with the knowledge that hospitals, jails and public buildings serve humanity in divergent ways, can you correlate the fact that one is erected and maintained wholly by taxation, while the other burden, that of caring for the very lives of our citizens, is placed on those who are sick or borne in part by charitable organizations?

Health is a human birthright! The nation is responsible for its people. The government, federal, state and local, must meet this problem. Suitable subsidy must be granted and hospitals adequately and conveniently located so that urban and rural residents may be served. This will assure a modern workshop for efficient and competent doctors who can be chosen by the individual who is sick, and who can be relied upon to serve their fellowmen.

I exhort the medical profession of this state and nation to advance a plan which would provide suitable hospitalization for all when needed, and especially attract the modern doctor when he graduates from the medical colleges, into the rural districts. Our duty is not alone to those in cities—we must serve everywhere—we must be a friend to all classes.

"It is my joy in life to find
At every turning of the road
The strong arms of a comrade kind
To help me onward with my load;
And, since I have no gold to give,
And love alone must make amends,
My only prayer is, while I live—
God make me worthy of my
friends."

I pass on to those who follow as presiding officers of the Oklahoma State Medical Association the tasks that Doctor LeRoy Long gave me; I have not completed them—the tasks are eternal—but each year brings the ideal condition nearer; each year, new tasks are added.

ACHIEVEMENTS OF UROLOGY*

ALFRED R. SUGG, M.D.

ADA

The officers of the urological section wish to acknowledge with thanks, not only the contributions of those who appeared on our program, but also the fine cooperation we received from the large percentage of urologists over the state who helped to plan the meeting and who have thus had a share in whatever success has been achieved.

I am pleased to have had this year, for the first time, a separate section on urology, as I think most of you are. There is no disposition on our part to "high tone" any other section of our association but we are a well differentiated group and this separate section emphasizes the fact that we are out of our swaddling clothes as a specialty. In fact, it serves notice to organized medicine that we are grown up and can stand on our own feet and can move ahead under our own steam.

Urology, as a specialty, has, in the last few years, acquired a new dignity. Not so many years ago, a urologist was little more than one who treated venereal disease and his attitude and practice was such as to merit little more than the scorn and ridicule to which he was subjected by other established divisions of the Asclepian art. Modestly, let me say that we have merited this new dignity. We have carved out for ourselves a place in the sun by the zeal and earnestness with which we have gone about our task. Urology has not progressed to its present high standing by invitation, nor has it won the golden spurs of achievement without a struggle. It has made a niche for itself in the truly acceptable way by making itself indispensable. There is scarcely a diagnostician today, either in medicine or surgery, sufficiently intrepid to risk an opinion on a multitude of lesions, without first seeking out the wealth of information that can be furnished by the urologist. Furthermore, we can point with pride to as many, if not to

more, outstanding advances in our field in recent years as anyone. The whole field is relatively new but progress in our armamentarium is so rapid that scarcely do we get outfitted and ready to go than we find our equipment has gone the way of a lady's last season hat. It is out-moded and a newer and better gadget is on the market. Nor is this rapid change merely the light-headed flitting from pillar to post just to be new. It represents a continuous chain of progress and refinement second to none in the realm of medicine.

After all, this recitation of achievement of which we may justly be proud, is not in reality what *we* have done but rather what *they* have done. I refer to the pioneers whose vision and industry and tenacity have paved the way to success and have laid at our door the fruits of years of research and profitless toil, that we may thus better be able to carry on. Where would we be but for the work of Caulk, Young, McCarthy, Davis, Braasch and Lewis—to mention only a few—and I pause to pay tribute to these and others who have added, if only a mite, to the sum total of effective means and measures that we are privileged to employ in our daily work.

I have never made an invention, nor have I even attempted the rather popular alternative of offering a modification. I have never synthesized a new drug nor originated a new technique, and I expect the same could be said for most, if not for all, of my audience. Then, what claims have I (or you who may be measured by the same rod), to share in the glory of urological achievement which is everywhere admitted? Granting that none of us have yet or ever shall originate either an idea or an implement, there is yet a very definite way by which each of us may participate. While I lay no claim to having done anything first (except perhaps to institute a few colossal blunders) there is yet some merit to following intelligently

*Chairman's Address, Urological Section, Annual Meeting, Oklahoma State Medical Association, Enid, April, 1936.

a meritorious leader. If you and I cannot break into the headlines with some new discovery, we can at least discriminate between hokum and horse-sense. We can hold on to accepted and time tried principles and turn our backs on flimsy theories that skyrocket into prominence today and wither tomorrow, as the mushrooms that they really are. We can at least cultivate the scientific as opposed to empirical method of approach to our problems. We can demand of ourselves a critical attitude to all new fledged ideas that are continually inundating the sea of medical literature and hedge ourselves about by every device known to man to prevent us from jumping at conclusions and convicting the prisoner before all the evidence is in, and can educate ourselves to the point where the only drug or measure which we will inflict on a long-suffering public, is one that looks favorable after a long series of controlled experiments in competent hands. Furthermore, we can refrain from bringing discredit upon some worthy procedure by half-hearted application and that without discrimination. We will be entitled to some of the credit for progress when we decide that post-graduate work is a necessity and that a well planned course at a reputable medical center is far more praiseworthy and practical than to be able to dissertate at length on what some detail man had to say, or to quote at length from the prejudiced pamphlets so generously furnished by the pharmaceutical houses.

While I am sure that you frequently despair at the task, nevertheless, you owe it to yourselves and to the profession, to continue to educate your clientele in the antidotes for quackery. What with six radio programs blaring into their ears in one hour, programs designed to entertain the young, beguile and scare the middle aged, and to play on the fancy of the low spirited senile; and what with a large portion of our druggists encouraging self-medication; and what (sad to relate) with some of our brethren neglecting to use such common items as the x-ray, microscope or cystoscope; and what with puny, pussy-footing, pusillanimous politicians playing into the hands of the credulous with spineless attempts to placate an organized, selfish minority, there would seem to be no need

for you to retire for the want of a world to conquer. And if any of you just run entirely out of something to do, you might busy yourselves with the little job of strangling this octopus of socialized medicine that is slowly entwining his slimy tentacles about our very throats.

I would love to see a better organization of the urologists of this state; more, also, of our number affiliated with the regional and national organizations and to have each of you declare himself a delegate of goodwill and fair practice, that our section may grow in grace, numbers and *esprit de corps*.

Tularemia: Review of Literature of Cases Contracted by Ingestion of Rabbit and Report of Additional Cases With a Necropsy

Although Harold L. Amoss and Douglas H. Sprunt, Durham, N. C. (Journal A. M. A., March 28, 1936), cannot prove that the rabbit eaten by two persons whose cases they report had tularemia, it seems likely that the rabbit was weak at the time it was killed, as the hunters were probably too intoxicated to shoot a well rabbit. It is also likely that the animal was not thoroughly cooked, and Francis has shown that the organisms may withstand some cooking and still be infective. The mode of entry of the organism may have been through the intact skin, but it seems likely that the alimentary canal was the mode of entry. This is borne out by the fact that a lymph node from the hilus of the liver as well as the liver itself showed definite evidence of tularemic infection. A diagnosis of systemic infection with tularemia was made in both cases because of the high fever, delirium and typhoidal state without physical signs. Such a diagnosis led to the agglutination tests and to more detailed histories. The agglutination test in case one and the history of the ingestion of rabbit meat appear to confirm the tentative diagnosis. Of especial interest is the fact that in the two cases of strikingly similar courses only one showed positive agglutination to *Bacterium tularensis*. This is not an unusual observation in typhoid. No definite ulceration was found in the intestine as in the case of Beck and Merkel. It does not, however, seem unlikely that the tularemia organisms can pass through the intact intestinal mucosa, as they have the ability to pass through the skin.

Summer Diarrhea in Babies

Casec (Calcium caseinate), which is almost wholly a combination of protein and calcium, offers a quickly effective method of treating all types of diarrhea, both in bottle-fed and breast-fed infants. For the former, the carbohydrate is temporarily omitted from the twenty-four hour formula and replaced with eight level tablespoonfuls of Casec. Within a day or two the diarrhea will usually be arrested, and carbohydrate in the form of Dextri-Maltose may safely be added to the formula and the Casec gradually eliminated. Three to six teaspoonfuls of a thin paste of Casec and water, given before each nursing, is well indicated for loose stools in breast-fed babies. Please send for samples to Mead Johnson & Company, Evansville, Indiana.

Surgery—A Fine Art or a Technique?*

A. S. RISSER, M.D.
BLACKWELL

Generalizations are ever more easily substantiated than specific statements. In fact, if generalizations are sufficiently general they require no substantiation. It is always possible to express opinions—if one has them—but facts sometimes need to be proved—at least in the realm of science—and, medicine and surgery are supposed to be branches of science. To most of us, our own personal activities and accomplishments bulk but small in the great fields of surgery. So it may be more encouraging—and perhaps more stimulating to others to analyze some of the accomplishments and achievements of surgery in general than to recount to others our own personal failures, or even our all too few partial successes. Hence, for the Chairman's Address, the writer has chosen the rather intangible and too inclusive subject of Surgery and Surgeons in general. If in his "random" remarks, he should succeed in "scoring a shot" occasionally, he may be pardoned, because like the prophet of old, he is "very jealous" for the Jehovah of Surgery, who is incarnate in the combination of a truly scientific mind and a good conscience. And further, if in this brief survey of the broad field of our surgical domain, past, present and possible future, the writer finds it necessary to express certain mild criticisms, nevertheless, he desires not to seem so narrow, that all of his remarks may be construed as strictures on all surgery or on all surgeons.

From the pre-antiseptic and pre-anesthetic days of surgery, when the patient sustained the terrible ordeal of the operation only by being held upon the table by the brute strength of retaining fetters or human hands, when as Sir James Simpson said, "operative patients were more in danger of death than English soldiers on the field of Waterloo," because of inevitable post-operative infection; when

operations were limited almost to amputation with the catlin knife and the saw—when speed and manual dexterity and stout-heartedness were the main qualifications demanded of the surgeon—from those days to the present is a far cry. Time is not sufficient to name the men and the measures, the discoveries, the volumes of the studies of human miseries, which have contributed to place surgery in its present high rank, the art most beneficent to all mankind, the most highly developed of all sciences. It would require more than an "eleventh chapter of Hebrews," merely to list the names of the pioneers of surgical faith and their discoveries. Now, no part of the human body is immune from surgical approach. In turn, abdomen, chest and cranial cavity have opened their secrets to the inquiring minds and eyes of the surgeons. Many of the diseases to which these organs are subject have proven amenable to the skill of the surgeon. And the end is not yet. Ours is not a static science.

The achievements of the past may confidently be taken as evidence that vastly greater discoveries and advancements will yet be made in all lines of surgical practice. New operations and better methods of operation will be discovered and the sphere of operability extended; on the other hand, certain "old things" in the way of operation will be "put away."

Chloroform and ether, once a boon to human suffering, are being replaced by newer anaesthetics. Further improvement in anaesthesia and anaesthetic methods is certain to be made. Local anaesthesia has removed from many operations the chief risk. Also it has taught us the advantage of careful and gentle manipulation of the body tissues. The use of spinal anaesthesia has been greatly extended. While it is comparatively safe within the lower levels of the cord, it carries an appreciable risk as anaesthesia is extended upward to the higher levels. The recent discoveries of

*Chairman's Address, Surgical Section, Annual Meeting, Oklahoma State Medical Association, Enid, April 8, 1936.

avertin, sodium amytal, ethylene and cyclopropane are but the guarantee that other and perhaps more efficient and possibly safer means of anaesthesia will yet be devised.

The trend of the new surgery is to simpler, safer operative methods. For example, the surgical treatment of peptic ulcer leaves much to be desired. Comparatively few ulcer cases demand operative interference. In many cases the word "interference" is a specific word, denoting the lack of necessity for operation, and the conscientious surgeon will exhaust every available dietetic and medical aid before resorting to operative measures. There is always the possibility that the real cause of ulcer formation may yet be discovered, that some preventive or curative drug or vaccine may be elaborated, thus making ulcer surgery a rare necessity. The roentgen ray and radium have done much to limit the field of operative cure in cancer and many other conditions.

A further example of the trend to simpler surgery is the present treatment of varicose veins and ulcers. The former extensive dissections, time-consuming, bloody, hospitalizing and even fatal operations have been superseded by "office treatment," not detaining from business, practically safe and comparatively painless. In like manner it seems more than possible that other conditions such as hydrocele, spermatocele, hemorrhoids, possibly even undescended testicles and hernia may be made amenable to non-surgical and yet scientific methods.

In the light of what has already been accomplished, we are justified in our faith that still further progress will be made in this direction. This is not to say that the surgery of the future can be done by any mechanistically inclined adventurer. True surgery has always been more than mere manual dexterity. Increasingly, the surgeon of the future must perfect himself in the knowledge and the details of service which will be ever more exacting of intelligence, honesty and skill than it is at present. Witness the wealth of knowledge which must be that of the brain and neuro-surgeon, the infinite care and meticulous concern which must be exercised in the invasion of this sacred precinct.

Surgery is far more than merely a profession or a trade, more even than merely a science of the highest type. The practice of surgery is also an art, an art of supreme importance, since it is deeply concerned with human lives and human personalities. Often do we find that with diseased bodies are associated disturbed minds and distressed souls—and they are integrated and interdependent. They can not be treated separately. In this respect we need to readopt the principles of Galen. As we have been taught to avoid rough handling of the tissues during an operation, so we need to learn understanding and consideration for the feelings, the psyche, the whole body of emotions of the patient. Too often this duty of the surgeon has been neglected. If "to operate, or not to operate," is the question, the answer should depend on whether the good effects of the proposed operation will out-weigh the evil. It would be well if the surgeons were to recognize that, theoretically, at least, every operation imposes an added burden upon the physiologic processes of the body mechanism, directly or through some of the various sympathetic reflexes.

The decision to operate in a given case can be rightly made only after an intelligent survey of all the findings; and the time and type of operation decided only with the aid of what may be called a prophetic fore-knowledge of the ultimate, beneficial results to the total welfare of the patient. Aiding us in the decision as to the wisdom of operation are the study and understanding of the interrelations of organs as parts of one organism—as per Galen—and determination to do reconstructive or rehabilitative surgery, rather than merely ablative operations.

If surgery is to continue an enlarging science, dynamic not static, surgeons must continue to display an eternal interest in phenomena and their significance, with the high intent of converting facts into healing knowledge. Not only the observation of phenomena but the recording of them, and what may be termed a speculative mind, have ever been surgery's mode of progress. Always the eternal question "why" needs to be answered. For centuries surgeons knew that milkmaids who had had cowpox were immune to smallpox. But it was left for Jenner, to the lasting

benefit of mankind, to establish the fact that cowpox and human pox were identical and preventable. Thus does the exercise of the power of deduction enlarge our store of surgical knowledge. The question, "What is Truth?" must be asked, not in the spirit of Pilate, who offered it as an excuse for a hopeless attitude in its pursuit, and as a refusal of personal responsibility in its application; but in the mind of the surgeon it must be a constructive question: How may Truth be utilized in the domain of surgery?

For example, the pathology present in a given case does not tell the whole story. Abnormal anatomy and dysfunction are only the results of antecedent causes. An intelligent query as to the why and wherefore should lead us back to the initial lesions, and help us to interpret the symptoms as significant not only for a particular organ but for the organism as a whole. In fact, the advancement of surgery will be measured by the degree to which we are able to anticipate the development of pathological conditions and prevent their eventuality in disease and possible death..

No man can lay claim to the title of surgeon who does not make a careful history of his cases; who does not keep a record of symptoms, findings and the results of treatment. "O.K." and "N.G." are not scientific data. They are merely financial estimates, and have no place in the records of real surgeons. The executive committee of this section has had only two requests to read papers or report cases at this meeting. Surely, in the professional experience of some of our more than a thousand physicians, there should have occurred more cases of interest worthy of detailed study and report.

Many of our greatest advances in surgery have come from the careful observation and scientific work of men removed from great medical centers. The writer would offer a word of encouragement, especially to his younger and perhaps more scientifically trained colleagues, to make use of their opportunities by carefully observing and recording data, not only to increase their own skill and efficiency, but to make some worthy contribution to the science of surgery as well.

In the light of the almost miraculous

results of scientific study of the patient, combined with exercise of common honesty and a good conscience in deciding the necessity and proper manner of an operation, the pseudo-surgeon for whom every pain between the chin and the knees, spells "appendicitis," and who removes tubes and ovaries by the score, will have increasingly more difficulty in continuing such unwarranted surgery. The public, even now, is beginning to recognize the difference between the real surgeon and the mere operator.

Not more operations, but better surgery must be our goal. Not more frequent surgery but more intelligent operations; not so many mutilating operations, but more rehabilitative surgery, better technique, gentler, more respectful handling of tissues, seeing those tissues and organs in their biochemical functions and relations with all the other organs in the organism as a whole. Galen was right. He insisted that the whole is even more than the sum of all its parts. They are alive and living in relation with each other and with their environment. We need to readopt the truth of Galen's principles. This broad conception might provide some otherwise rampant surgeon's intelligence enough and surgical conscience sufficient to appreciate the virtue of a "masterly inactivity"—to recognize the contra-indication and to withhold the knife until an honest effort has been made to utilize available non-operative measures.

The well informed and honest surgeon will admit that there are in our midst thousands of women needlessly unsexed, by removal of one or other of their pelvic organs. These unfortunates are unsexed psychically as well as genitally. Their whole mental attitude and outlook is altered and they go through life, incurable psychopaths, haunting the offices of one physician after another, in search of a cure that is no longer possible. If they would haunt only the surgeons responsible for their plight, the punishment might produce a reformation. For to most normal women, the ovary is worth far more than is her paltry hundred dollars to the surgeon. And, it may yet be established that the uterus also provides an endocrine substance, which is of value to the female economy, especially in the early years.

And speaking on the subject of the psychic element in surgery the writer is of the opinion that there is much evidence that we surgeons have not yet learned to utilize certain mental, psychic and spiritual influences which are, or should be available to aid us in the art of reconstructive surgery.

Surely, there are untapped resources in the unexplored realm of the mind and soul, greater than we have been wise enough or willing enough to admit, which could be of immense aid in bolstering up the physical mechanism.

Man is a religious being—even though that fact is not yet evident to some of our fraternity—and the wise surgeon will take cognizance of the comfort and balance and rehabilitative power which religious faith can furnish. But between the pseudo-scientific surgeon, professing to utilize the psychic forces for the guidance of his patient back to health—by the way of surgery—and the conscientious and truly scientific user of spiritual power, there is a great gulf fixed; and only the knowledge that psyche and soma are one integrated whole, and a high conception on the part of the surgeon of his share in the reconstructive and rehabilitative process can bridge that gulf.

To paraphrase Mr. Dooley's wise criticism: if Christian scientists were more scientific and surgeons were more Christian, the application of the art of surgery, if not the "science" would benefit vastly more members of humanity.

In the sphere of obstetric surgery, however, the indications for surgical measures are certain to be extended. An elective Caesarean section will be accepted as a far more conservative operation than a high forceps delivery or even a difficult low forceps. Statistics are adduced to prove that there are in this country one hundred thousand diabetic women of child-bearing age. For these women pregnancy and labor spell a vastly increased risk to both mother and child. For such women, speedy and safest possible delivery of the child, often abnormally large, is most essential. In a fairly large percentage of these cases, delivery by means of Caesarean section with selective

anesthesia offers the safest method. But, the extension of the scope of Caesarean section will be justified only when, and if, the accoucheur, the obstetrician and family physician have learned to keep their always potentially contaminated hands out of the germ-welcoming birth passages. Progress in this direction is predicated on the elimination of meddlesome midwifery. Incidentally, it might be mentioned in passing that our mortality and morbidity rate in obstetric work is almost criminal, so that here, again, opens a large field for cultivation, not only by the surgeon, but we might add by the general practitioner.

In closing this brief and sketchy outline of surgery as an art, may I recapitulate as it were, by giving my estimate of what I believe to be necessary characteristics of even the "average" surgeon of the future. He will be not merely a brilliant operator, skillful only in manipulative technique, in sleight of hand performance, but he must be a careful clinician and an efficient diagnostician; gifted in eliciting a correct history and in the evaluation and correlation of signs and symptoms. He must be one whose chief concern is not alone to operate, but to benefit the patient. The surgeon, I foresee, will desire to respect both the body and the whole ego of his patient, and to return them, if possible, to a life of comfort and of usefulness. But also he will know his own limitations, and for the welfare of the patient, will cooperate with or give place to another colleague more skilled. He will be wise enough to admit the infinite wisdom of the Supreme Designer and Creator of the body of Man, and content when dealing with that body, to follow as best he can God's plan, because he respects Life and the God who gave it.

Lower Lobe Tuberculosis: Review

Charles E. Hamilton and Harry Fredd, Brooklyn (Journal A. M. A., August 10, 1935), discuss the incidence, diagnosis, mode of development, symptoms and prognosis of lower lobe tuberculosis and report ten cases of the disease. They found no involvement of upper lobes in any of the patients. The history and the clinical course of the disease are the most valuable aids to a tentative diagnosis. The authors conclude that negative sputum examinations do not rule out lower lobe tuberculosis.

Further Observations on Vitamin A Deficiency as Shown by Studies With the Visual Photometer and Clinically*

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Clinical observations, as well as tests made with the visual photometer, prove conclusively that vitamin A must be considered one of the most essential factors in nutrition. It should be possible to describe certain characteristic symptoms and signs that would form a definite clinical entity so that vitamin A deficiency could be readily recognized clinically. Vitamin D deficiency in early years causes the definite bony changes (rickets) which persist in certain instances throughout life. It would appear that there must be also some definite clinical evidence of vitamin A deficiency.

During the past year I have carefully studied over three hundred individuals in all walks of life, and ranging in age from infancy to seventy years. The majority of these subjects proved to be deficient in vitamin A as shown by tests made with the visual photometer according to the technic of Jeans and Zentmire.¹

Clinically, one or more of the following symptoms have been noted in individuals shown by tests with the visual photometer to be deficient in vitamin A.

1. General lack of vim and vigor.
2. Fatigue out of proportion to the difficulty of the task or the age of the individual.
3. Lack luster of the cornea.
4. Nervous irritability and loss of sleep.
5. Dryness of the hair and roughening of the skin.
6. Ptosis of the eyelids.
7. Visual difficulties similar to those which are characteristic of night blindness.

Clinical observations suggest that the

asthenic individual (child or adult) presents a picture closely resembling that of vitamin A deficiency. Such individuals are found in all classes and races. The deficiency may be due to lack of proper food, perverted appetite, or inability to absorb and utilize vitamin A from the normal food intake.

Different degrees or varieties of deficiency have been demonstrated. The far advanced state of deficiency with xerophthalmia is readily and generally recognized. Not infrequently an acute state of deficiency, brought about either by lack of ingestion of the proper amount of the vitamin or by an infection. These types of deficiency are readily relieved by large doses of vitamin A concentrate.

There is a milder degree of deficiency characterized as the "twilight zone" of vitamin lack with borderline states described by Salter.² The usual causative factor in these instances is an impoverished diet, due either to economic limitations, or, especially in women, to the current fad for weight reduction. A chronic state of vitamin A deficiency may be caused by either a prolonged lack of proper food or the inability to absorb vitamin A from the food supply due to systemic disease or infection, altered liver function or inability to utilize fats. As will be shown later in the paper, the individuals in my series showing evidence of a chronic deficiency were of the asthenic type as a rule and did not respond promptly to large doses of vitamin A concentrate in the form of carotene in oil. Large doses of carotene over a period of several months were required to produce effect, giving evidence of the fact that a prolonged or chronic deficiency of vitamin A requires far above the normal amount of vitamin A over a long period of time in order to rebuild the

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damage done to tissue and make possible utilization and storage of vitamin A.

In my most recent experiments, seventy-eight (or eighty-three per cent) of the ninety-four subjects tested with the visual photometer showed varying degrees of vitamin A deficiency. A large percent of the group were inmates of an orphanage

for Indian children; all were on the same diet and lived under the same conditions. Included in the group also were patients (referred by physicians) in whom vitamin A deficiency was suspected or had been diagnosed.

The accompanying chart shows the results of photometric examinations in thirty-one cases selected from ninety-four cases studied in this report. The numerals under the date heading refer to cases and the dosage given is that of carotene in oil.*

As in other studies, the majority of the subjects who were found deficient in vitamin A by the use of the visual photometer, when given carotene in oil showed improvement in the regeneration of the visual purple.

Rhinehart³ has suggested the possibility that there may be an embryologic basis (according to whether the origin is ectodermal, entodermal or mesodermal) which determines the relation of the tissues to vitamin A. According to this theory, tissues and structures arising from the same germ layer should be influenced to the same degree by the presence or absence of vitamin A.

With this theory in mind we find that the retina and cornea are especially rich in vitamin A and that their health and function is governed largely by the presence of this vitamin. These structures arise from the ectoderm, also of ectodermal origin are: (1) The epidermis and its derivatives (hair, nails, sweat glands, lens of eye). (2) The epithelial lining of buccal, nasal and a part of the pharyngeal cavities; the enamel of the teeth; the salivary glands. (3) The epithelial lining of the anal canal, the vestibule, and a portion of the urethra in the male, with associated glands. (4) The anterior lobe of the hypophysis; the paraganglia; the smooth muscle of the iris.

In line with this theory is the fact that vitamin A deficiency frequently causes roughening of the skin and dryness and falling of the hair. Rats made deficient in vitamin A show changes similar to the spinal cord lesions found in pernicious anemia. With this in mind it would appear that vitamin A is essential to the health of the entire nervous system and that fur-

CASE No.	AGE- YEARS	Readings When Admitted				INTERVAL- DAYS	Readings When Discharged				REMARKS
		Initial R'ding		10 Min. R'ding			Initial R'ding		10 Min. R'ding		
		Wedge Setting	Diaphragm Setting	Wedge Setting	Diaphragm Setting		Wedge Setting	Diaphragm Setting	Wedge Setting	Diaphragm Setting	
4	19	3	12	4	12	46	4	20	5	8	15 M. t.i.d.
5	20	2	8	4	20	55	3	20	7	12	15 M. t.i.d.
6	33	3	6	3	6	145	3	12	5	20	15 M. t.i.d.
12	40	2	20	4	12	11	4	20	5	18	25 M. t.i.d.
13	10	1	20	1	20	55	1	20	2	10	15 M. t.i.d.
15	7	1	20	1	10	55	2	20	4	12	10 M. t.i.d.
19	15	2	20	2	10	37	2	20	4	12	20 M. t.i.d.
24	50	3	20	3	20	39	3	20	4	20	20 M. t.i.d.
27	9	1	20	2	20	56	2	20	5	20	15 M. t.i.d.
29	9	0	20	3	20	48	0	20	3	12	15 M. t.i.d.
30	20	3	20	4	8	14	3	20	7	20	15 M. t.i.d.
35	18	2	20	5	20	17	4	20	6	20	25 M. t.i.d.
36	34	3	12	3	18	44	1	8	4	14	20 M. t.i.d.
38	16	1	8	2	12	27	2	10	6	20	15 M. t.i.d.
48	27	3	20	5	20	33	4	20	7	8	15 M. t.i.d.
49	8	4	12	6	20	33	4	12	8	16	15 M. t.i.d.
53	11	4	20	5	8	53	4	12	8	20	10 M. t.i.d.
62	20	3	20	4	12	33	4	10	7	12	25 M. t.i.d.
66	20	3	12	4	6	37	4	12	7	20	15 M. t.i.d.
67	19	3	6	4	8	22	4	12	8	18	15 M. t.i.d.
70	28	2	8	3	8	84	3	20	6	12	25 M. t.i.d.
77	25	3	10	3	12	61	4	20	5	18	15 M. t.i.d.
81	40	3	8	4	20	18	3	20	5	20	20 M. t.i.d.
82	18	2	15	3	20	18	3	12	6	20	15 M. t.i.d.
86	18	2	14	3	10	46	3	18	6	16	15 M. t.i.d.
87	6	2	18	4	16	20	3	10	5	10	10 M. t.i.d.
91	20	3	14	5	12	18	5	20	8	20	10 M. t.i.d.
92	32	2	20	2	8	49	2	20	3	12	15 M. t.i.d.
93	42	2	20	2	6	54	2	20	5	20	20 M. t.i.d.
37	15	1	20	4	13	19	1	20	4	20	10 M. t.i.d.
57	44	3	20	3	10	16	3	10	3	10	25 M. t.i.d.

The above chart shows the results of photometric examinations in thirty-one cases selected from the total number studied. These cases were selected to show briefly, varying ages, and different periods of time cases were observed. The resulting improvement in the majority demonstrated that the regeneration of visual purple is increased by the addition of carotene to the diet.

*Furnished through the courtesy of the S. M. A. Corporation, Cleveland, Ohio.

ther study should be given to this feature.

It is further noted that enamel organ arises from the ectoderm. This fact suggests the idea that a visual photometric study of mothers a considerable period before gestation and during pregnancy, correlated with an observation of the teeth of offspring of known vitamin A deficient and normal mothers might contribute to the knowledge of the etiology of dental caries.

It appears that a healthy state of the epithelium of the uro-genital tract (mesodermal in origin) is influenced by the normal amount of vitamin A in the system. If this is true it may well be that other tissues of mesodermal origin (smooth muscle, connective tissue, blood, bone marrow, endothelium of blood vessels and lymphatics, lymphoid organs and suprarenal cortex) are similarly affected. As will be shown later in this paper, it appears rather definite that the blood and bone marrow are affected. In a large number of patients given large doses of carotene in oil over a considerable period of time an increased vigor and ability to stand strain was noted. From this it would appear possible that the suprarenal cortex is stimulated by an ample supply of vitamin A.

The following is a review of the literature, correlated with our clinical observations on vitamin A:

THE EYE

Xerophthalmia and night blindness first served to direct attention to vitamin A deficiency. The health of at least a part of the ocular tissues is largely governed by the presence of normal amount of vitamin A or carotene.

Krause⁴ has recently reviewed the literature on the biochemistry of the eye. Referring to the growth of the eye he says: "With a rachitic or low protein diet, the eyeballs are above the normal weight and the external orbital glands are markedly subnormal. Therefore, the nutritional deficiencies permit some of the external ocular bulb to continue growth in a similar manner to that of the central nervous system."

The corneal epithelium is evidently influenced by the action of vitamin A.

Krause states, "A certain form of keratomalacia or xerophthalmia arises from the lack of fat-soluble vitamin A in the diet. A part of the corneal dystrophy is perhaps related to the lacrimal and the conjunctival secretion. According to Jaensch, it is doubtful whether only the cholesterol and fatty metabolism of the cornea is affected. Crystals of cholesterol may be formed in the cornea under a degenerated and vacuolated epithelium in certain types of keratomalacia."

In our observation we found that there was a "lack luster" of the cornea in a great many of the cases found markedly vitamin A deficient.

Krause states that: "The iris is a composite tissue consisting of endothelium, pigmented epithelium, blood vessels, muscle, connective tissue and an internal lining membrane. In some birds and reptiles the iris is yellow or red from the color of the chromolipids in the oil droplets in the anterior cell. Although the nature of these colored oils in the iris is unknown they probably are the same chemically as those in the retina." These facts would suggest that vitamin A plays a part in the health of the iris and its function, as vitamin A or carotene is found under the same circumstances in the retina.

In studying vitamin A deficiency I have used a Birsch-Hirschfeld photometer, after the technic of Jeans and Zentmire.¹ Jeans has shown that the test for vitamin A deficiency employing the visual photometer is actually the measurement of the degree of night blindness.

In the retina are the small rods which are sensitive only to light and darkness. Around these rods is deposited visual purple, a substance which is very sensitive to light and disappears entirely when it is exposed to very bright lights for any great period of time. After sufficient time has elapsed this substance is rebuilt by metabolic processes provided that the proper elements are present. According to Krause, "Faulty regeneration of visual purple may result in night-blindness." Perhaps the most common cause of the condition is the lack of vitamin A. Holm and Sugita⁵ demonstrated that rats which were deficient in vitamin A were unable to see

normally in dim light. Yoshiue⁶ tried unsuccessfully to detect differences in the color of the retinas which were removed from dogs in the same condition. Fridericia and Holm⁷ were more fortunate, and were able to find subnormal color in the fundus of vitamin A deficient rats. The color regenerated more slowly in the abnormal eye than in the normal. Tansley⁸ estimated quantitatively the amount of regeneration of visual purple in healthy and vitamin A deficient rats. She definitely proved that the amount of visual purple is diminished in the dark-adapted retina of the vitamin A deficient rat.

Another phase of the same problem has been investigated by Yudkin, Kriss and Smith,⁹ who found the retina to be an exceedingly rich source of vitamin A. It has been mentioned that the pigmented epithelium contains chromolipid which apparently is partly composed of carotene, an evident precursor of vitamin A, but no conjecture can be made at this time on the relation of carotene to the genesis of visual purple. Kuh¹⁰ has made the interesting suggestion that since the retina exhibits the type of metabolism which is characteristic of malignant tumor tissue, and since vitamin A inhibits the growth of tumors, the large quantity of vitamin A present in the normal retina may explain how this tissue can have the metabolism of tumor tissue with no tumor growth. Unless better evidence is presented, however, this explanation is questionable. There is no reason to suspect that tumors occurred more frequently in retinas affected by vitamin A deficiency.

At this point, it is interesting to note that the retina and uvea contain more vitamin B than the other tissues. The vitamin B content of these two tissues is similar to that of the brain."

In the writer's experience with the photometer in a large number of patients found to be vitamin A deficient the response of the visual purple was more prompt and better after carotene in oil had been given in large doses for varying periods of time. It appears that carotene has a specific action on the regeneration of the visual purple, in addition to whatever part it plays in the nutrition of the eye.

In a number of patients who failed to respond to forced vitamin A therapy the addition of vitamin B in the form of brewer's yeast showed improvement in the regeneration of the visual purple. As vitamin B is an important constituent of the retina and also of the other related tissues, it appears that a certain amount of vitamin B must be present to secure the maximum benefit from vitamin A therapy and that in addition to assisting in the absorption of the vitamin A from the food, it must play some part in the metabolism of the eye.

It is interesting to note that carotene is found, according to Krause,⁴ in various quantities in the following structures of the eye: choroid, iris, cornea, lens, retina, and sclera. This is in addition to the vitamin A found in these structures.

Some authorities have advanced the opinion that ocular cataracts might be caused by vitamin A deficiency and avoided by a diet rich in this vitamin. However, there is nothing conclusive to prove or disprove this claim at present. It would be of considerable scientific interest to study by means of the visual photometer a group of patients with cataracts in early stages.

Trachoma is, of course, a specific infection; however, it has been observed that it occurs more frequently and is more intractable in response to treatment when found, as it usually is, among poorly nourished and vitamin deficient individuals. Evidently vitamin A deficiency lowers the resistance of the tissues to infection.

EAR, NOSE AND THROAT

In a series of cases reported in a recent paper¹¹ I found that all patients with infections of the ear, nose and throat showed very low tests on the visual photometer. Those in whom the process was not of an extremely chronic nature responded well to large doses of carotene in oil.

Cody¹² states that "a diet deficient in vitamin A produces a metaplasia in the epithelium of the nasal mucosa. This change is from the cylindric to the stratified squamous cells. It begins in a group of cells deep in the epithelium, which by enlarging and fusing with other similar foci extend toward the surface."

According to Cody,¹² "The sinusitis and

otitis media once established are not cured by the addition of vitamin A to the diet."

In consideration of the wide prevalence of chronic sinusitis and otitis media, especially in certain localities, it appears that stress should be laid on a high vitamin diet and the use of vitamin concentrates during the winter months, so that the epithelial tissue of the upper respiratory tract will be protected against the inroads of infection. This is especially important in infants and growing children.

Bloch¹³ found many severe infections in eighty-six cases of xerophthalmia. In addition to pneumonia and bronchitis in twenty-seven, there was otitis media in thirteen, pyelitis in twenty-seven, and pyoderma in fourteen cases.

During the recent depression I observed a number of patients with marked vitamin A deficiency who for months had lived on the scant food provided by the bread line in Chicago. They had no resistance and were the victims of all forms of infection. Their response to treatment was extremely discouraging. These cases presented very much the same picture as the drouth cattle, although they were able to live longer, possibly due to a storage of vitamin A. There is no doubt that the depression has done irreparable damage, especially to growing children, the food provided by relief agencies in most instances being notably deficient in vitamin A.

TEETH

According to Mellanby,¹⁴ "Another outstanding feature of the experimental work was the demonstration that a deficiency of vitamin A or carotene played an important part in the development of the periodontal tissues and in the control of the onset of periodontal disease, including pyorrhea. Up to the present time these observations have not been applied to man, but that they can be so extended is strongly supported by the distribution of this disease in different races. For example, it is found that natives in many tropical regions are nearly free from caries, but are subject to periodontal disease when their diet consists largely of white maize and a little green vegetable and their bodies are exposed to sunshine."

Cady,¹⁵ working among the Indians, made the following interesting observations:

"Examination was made of two thousand and six hundred thirty Indian school children. The following figures show clearly the incidence of dental caries among them: age group six to eighteen years: pupils examined, two thousand six hundred thirty; pupils with caries, six hundred ninety-two; pupils without caries, one thousand nine hundred forty-eight.

"This comparatively low incidence of dental caries is due to conditions among the Pima, Apache and particularly the Navajo tribes. These three tribes are the best of all from a dental standpoint. The opposite is true of the Pueblos, who have a high incidence of dental caries. Of the two thousand six hundred thirty examined in the southwest, five hundred thirty-three were Pueblos. Of this number, two hundred ninety-two were found to have dental caries. "A recent examination of one thousand three hundred six northern and southern Pueblo Indian school children shows sixty per cent with dental caries. This examination was made by the field dentist of that district with mirror and explorer. Comparison with the foregoing figures show that while approximately twenty-five per cent of the total examined were Pueblos, more than forty per cent of those having dental caries were from this tribe. Considerable hypertrophy of gum tissue was observed in all school children, though the percentage of salivary deposits is low. Observations and reports indicate that there is a high rate of chronic low grade Vincent's infection prevalent among the entire Indian population of the country.

The greater percentage of defects is in the deciduous teeth of the younger age groups. This is clearly demonstrated by a comparison of the results of this survey among the southern Pueblo Indians of New Mexico; age group, six to eleven years: pupils examined, three hundred seventeen; pupils with caries, two hundred thirty-one; pupils without caries, eighty-six; age group eleven to sixteen years: pupils examined, one hundred forty-six; pupils with caries, sixty-seven; pupils without caries, seventy-nine."

Townsend¹⁵ of the Indian Service, reports that the Navajos, who were in a better condition than the other Indians from a dental standpoint, lived almost entirely on a diet of mutton, which must have in some way supplied the necessary vitamins; while on the other hand, the Pueblos, whose diet consisted largely of jams and sweet stuffs with practically no vitamin A or other vitamins included in the diet, show marked dental caries.

In questioning a number of Indian children in whom vitamin A deficiency had been demonstrated by tests with the visual photometer, it was found that they preferred a diet similar to that of the Pueblos, with the exception of the fact that they had an occasional glass of milk. Certain sections of the Indian reservations or settlements still offer an opportunity to observe vitamin A deficiency due to poor nutrition. Dental caries, however, was not marked among the members of tribes who furnished the basis for the studies reported in this paper.

RESPIRATORY DISEASES

When studied with the visual photometer, all patients who have had recent attacks of pneumonia, bronchitis, or other respiratory infections, have been shown to be deficient in vitamin A. A number of patients seen following attacks of bronchial or lobar pneumonia improved rapidly with large doses of carotene in oil. They showed increased regeneration of the visual purple and gained in weight. The past histories of the majority of these patients would indicate that their diets had been deficient in vitamin A.

Beard¹⁶ states: "Since we know that the children in under-privileged families die of respiratory diseases in large numbers, while those in better circumstances exhibit a remarkable resistance to the same maladies it may be worth while studying the possible vitamin A factor in this circumstance. It seems reasonable that until we know more about this situation, we advise pregnant women to pay attention to their intake of foods which contain vitamin A or its precursor, Carotene."

Blackfan¹⁷ calls attention to the fact that in infants the commonest and earliest appearance of the keratinizing metaplasia is in the trachea and bronchi. He thinks

that the early effect of the deficiency upon respiratory mucosa is, in our minds, a satisfactory explanation of the frequency, severity and persistence of the pneumonias that have been in most instances responsible for death.

There is but little known of the exact role played by vitamin A in tuberculosis. Basu¹⁸ states: "The frequency of tuberculosis and respiratory infections in India is referred to the poverty of the diet in good sources of vitamin A, such as dairy products and eggs. Experiments on guinea pigs and an observation on tuberculous children, suggested that vitamin A might be valuable in prophylaxis and cure of tuberculosis."

The Plimmers¹⁹ have noted that outbreaks of bronchial pneumonia occur in children on diets deficient in vitamin A and disappear when this vitamin is given.

Other investigators believe that possibly bronchiectasis is due to the keratinization of the bronchial epithelium with occlusion of the bronchioles by desquamated keratinizing epithelium.

It is the consensus of opinion that bronchitis and similar conditions in the respiratory tract do not respond permanently to any form of treatment after they have reached a chronic stage. It therefore seems exceedingly important as in sinus and middle ear involvement to prevent these conditions by the assurance of liberal quantities of vitamin A or carotene in the diet of infants and growing children.

Some clinicians specializing in tuberculosis have found carotene in oil very helpful in a large number of patients who are losing weight and are potential victims of pulmonary tuberculosis.

Carotene in oil in large doses in a great many cases of pulmonary tuberculosis stimulates the appetite and general physical condition of the patient; however, sufficient time has not elapsed to prove any curative value for vitamin A in tuberculosis.

THE ALIMENTARY TRACT IN VITAMIN A DEFICIENCY

As reported in previous studies, all patients in whom a pathologic condition of the gastro-intestinal tract had been proved, showed a marked vitamin A de-

iciency when tested with the visual photometer. Some of these cases improved on heavy doses of carotene in oil, while others showed no improvement whatever.

A recent study on the fat absorption of individuals by Sullivan and Ferstrand²⁰ shows that individuals apparently normal in every way absorb a larger quantity of fats than did patients with cirrhosis of the liver, circulatory diseases, gall bladder conditions and various types of gastrointestinal disturbances.

We pointed out in a previous paper¹¹ that the visual photometer furnishes a yardstick with which to measure the function of the liver, in that it measures vitamin A, a fat soluble vitamin; it appears that it would also furnish an index of the ability of the liver to utilize fats. The inability of the liver or the digestive tract to assimilate or utilize the vitamin A present in the diet would suggest an alteration of the liver function and probably accounts for a large number of the patients found vitamin A deficient while on a liberal diet rich in vitamins. It is a well known fact that the flow of bile is necessary for the proper digestion of fats. It is also known that the visual photometer shows that patients with catarrhal jaundice are very low in vitamin A.

Considerable work yet remains to be done to determine the exact factors governing the absorption of vitamin A or carotene from the gastro-intestinal tract. It has been found that in some instances carotene in oil is more readily absorbed when the individuals receive doses of vitamin B in the form of brewer's yeast. It is also noted that vitamin B is present in larger quantities in the retina and uveal tract than the other ocular tissues, giving rise to the suggestion that these vitamins act jointly, both in absorption and in the effect on the ocular tissues.

Recent articles by leading clinicians indicate the belief that gastric and duodenal ulcers are in part at least the result of vitamin A deficiency. Richards²¹ states: "Of much interest also is the association of ulcerative colitis with corneal and conjunctival inflammation. A similar association of xerophthalmia and intestinal infection was described by Schick and Wagner, while Berghund *et al*, speak of cases

of anemia in China, coupled with diarrhoea, where the diarrhoea responded dramatically to treatment with cod-liver oil."

Manville²² notes the following: "In animals suffering from avitaminosis A, a reduction in mucus secreted in the stomach without a corresponding interference with acid production. It is fairly well recognized that vitamin A or its precursor, carotene, is necessary for the normal functioning of the mucous epithelium, whether of the respiratory, urinary or gastro-intestinal tract. White rats on a vitamin A deficient diet develop gastric ulcers and peptic erosions. Sixty per cent of all the animals on vitamin A deficiencies of various degrees showed these lesions. The percentage approached one hundred as the deficiency became more severe."

Mouriquand²³ has developed a concept of the alimentary dystrophy, caused by a slight vitamin deficiency and showing no visible or characteristic symptoms. He feels that this condition is to be distinguished both from that of fully developed vitamin deficiency showing characteristic symptoms and from the state of latent deficiency which precedes it. Unapparent dystrophy may be revealed and characteristic symptoms made apparent by a variety of circumstances, such as qualitative and quantitative changes in the other constituents of the diet, occurrence of infections or other intoxications and changes in environment. Many examples dealing with vitamins A and B, C, D, and the deficiency diseases (xerophthalmia, beri-beri, pellagra, scurvy, rickets) produced by their respective absences, are given in support of this theory.

I have observed considerable improvement in a large number of cases of colitis and the diarrhoea of diabetics with the use of large doses of carotene in oil. There was a change in the shape and consistency of the stools. Rhinehart,³ who observed a series of cases of colitis, found that the most notable result of carotene in oil therapy was the relief of pain. He feels that the threshold of pain is lowered by vitamin A. This observation may indicate a nervous element in colitis.

As stated previously, it is yet a mooted question as to whether disorders of the

gastro-intestinal tract produce a condition preventing the assimilation of vitamin A from the food, or whether a prolonged deficiency of vitamin A causes certain changes in the alimentary tract.

Krause⁴ states: "Deficiency in regeneration of visual purple and night-blindness has been related to diseases of the liver. Baas and Koyanagi reported on the association of night-blindness and chronic uveitis with chronic hepatitis, especially cirrhosis of the liver. The latter writer believes that a degenerative process occurs in the pigmented epithelium. Dolganoff ties off the bile duct of dogs and thus produced choroidal and retinal changes. Majima repeated the same experiment with the frog, and reported a degeneration in the bacillary layer of the retina. Gluh, using rabbits, repeated the experiment of Dolganoff and obtained no changes in the rate of visual purple regeneration. According to Sugita, rats injected with sodium glycocholate, taurocholate, cholate and bile, develop uveitis and hemeralopia. Bilirubin produces no effect. The clinical and histological investigations of the retinas of the rats showed the destruction of the outer layer, and cholesterol infiltration of the pigmented epithelium, while conditions were similar to those in ophthalmia hepatica.

"Retinitis pigmentosa has been associated both with hepatic disease and visual purple. Krause was unable to detect abnormalities of the liver function in patients with retinitis pigmentosa, uncomplicated by systemic disease. The laevulose tolerance, the disappearance time of bilirubin in the blood, the urinary and fecal biliary pigment and the Van den Bergh test were not abnormal. These results are contrary to those of Takahashi, who, from the study of the dye disappearance time, glucose and galactose tolerance, alimentary white cell count, and of the blood, urinary and fecal biliary pigment, found hepatic disfunction in twelve cases of pigmentary degeneration of the retina. Some of his patients, however, were affected with systemic diseases. Verhoeff, after a study of the pathology of retinitis pigmentosa, a disease in which night-blindness is a typical symptom, concluded that the primary effect is degeneration of the neuro-epithelium, which is directly re-

lated to the accompanying pathological changes in the pigmented epithelium."

CAROTENE, VITAMIN A AND ITS RELATIONSHIP TO GENITO-URINARY TRACT AND REPRODUCTION

Experiments of Mason^{24a} and others give evidence that vitamin A is an etiologic factor in infections and other derangements of the genital tract. In his experiments, parturition was difficult in vitamin A deficient rats; there was impaired breast function and frequent foetal deaths. Many newborn rats were weak and died soon after birth. Mason also found that the testes of the rats were affected by vitamin A deficiency. The injury to the testes from vitamin A deficiency required two or three times as long for repair as injury caused by inanition. Similar findings have been reported by other investigators in this field. Several investigators in animal nutrition believe that sterility is often caused by vitamin A deficiency. This may account for sterility in young women who have lived on a vitamin A deficient diet in their period of development.

Mason^{24b} found keratinization of the vaginal epithelium in vitamin A deficient animals and was able to heal this and to produce a healthy epithelium by the use of vitamin A. Wolbach and Howe²⁵ have reported the extensive transformation of simple epithelium in various parts of the body into stratified squamous keratinizing epithelium (particularly the epithelium of the upper respiratory tract, the renal pelvis, urinary bladder, seminal vesicals, epididymus, prostate, salivary glands and pancreas) as a result of vitamin A deficiency.

With the knowledge of the action of vitamin A, it would appear that nephritis may in part be due to vitamin A deficiency, the alteration of the epithelial tissues making way for the inroads of infection. It would also be expected that other infections of the kidney and bladder might have their origin in vitamin A deficiency.

CAROTENE, VITAMIN A IN RELATION TO URINARY CALCULI

It is generally conceded by urologists that urinary calculi are caused in part by conditions brought about through vitamin A deficiency, together with other dietary factors. The work of Higgins,²⁶ Bliss and

Livermore,²⁷ together with other investigators has proven that stones are formed in animals made vitamin A deficient. Some authorities have caused the stones to dissolve by the addition of vitamin A to the diet and a change of the basic alkalinity or acidity of the diet. I have noted cases of kidney stones showing other cardinal symptoms of vitamin A deficiency. My observations would lead to the belief that vitamin A therapy can have but little influence on large calculi already formed. In cases in which the calculi have been removed and the health of the kidney has not been impaired the addition of vitamin A to the diet causes clinical improvement in the patient. Sufficient time has not elapsed to determine whether or not carotene will prevent the reformation of stones in these cases.

LESIONS OF THE NERVOUS SYSTEM IN VITAMIN A DEFICIENCY

Zimmerman²⁸ makes the following interesting observations on the lesions of the nervous system in vitamin deficiency:

"Under the conditions of the experiments, which consisted essentially of maintaining rats on a ration adequate in all dietary essentials as far as is known except vitamin A, the following changes were produced in the nervous system:

"1. Degeneration of the medullary sheaths of the brachial plexuses and sciatic nerves, and less often of the vagus nerves. Such lesions were not found in the optic nerves.

"2. Degeneration of the medullary sheaths of the sensory tracts on the periphery of the spinal cord and in the posterior columns. Much less frequently similar lesions were found in both the crossed and uncrossed pyramidal tracts.

"3. Changes of the same nature in the posterior nerve roots and less frequently in the anterior nerve roots of the spinal cord. Evidence was adduced to indicate that the changes in the sensory tracts of the spinal cord followed those in the posterior nerve roots.

"With the onset of muscular weakness and incoordination in these animals anatomic changes like those just described were found at necropsy but they were not present for any appreciable period preceding the onset of the clinical signs.

"For a short but undetermined period following clinical signs of recovery from the nervous disease, marked lesions were still present in the nervous system at necropsy.

"These lesions in the nervous system were produced by a ration containing no cereals which might have contributed a 'toxic' substance to account for the degeneration of the myelin sheaths. Neither does a deficiency in unsaturated fatty acids appear to have played a role in their development."

In my observations on vitamin A deficient patients, either referred to me or discovered through tests with the photometer, there has been in many instances, marked improvement in nervous irritability by the use of large doses of carotene in oil. Observations also indicate that vitamin A and B apparently act jointly in the relief of nervous disorders, such as neuritis, pains due to colitis and similar conditions.

It would appear that vitamin A deficiency has a part also in the production of the so-called neurasthenic individual who is usually below par in nutrition. Further study on markedly deficient individuals and observation of the development of these conditions may lead to the linking of vitamin A deficiency with nervous disorders, as indicated in the experimental work previously.

VITAMIN A DEFICIENCY IN RELATION TO GLANDULAR FUNCTIONS

Vitamin A evidently plays an important part in the metabolism of internal secretions. In my observations with the visual photometer it has been noted that in cases of hyperthyroidism, so called neuro-circulatory asthenia, the regeneration of the visual purple was poor and there was a peculiar flickering of the lights not noted in other conditions. It is almost certain that vitamin A plays a large part in the important and unusual metabolism of the retina and recent studies would indicate that there is a relation of these structures to each other and to vitamin A. Von Querner²⁹ in his studies with the fluorescence microscope, observed that in the paraplasmatic fat inclusions of the hepatic parenchyma of the adrenals and of the hypophysis as well as the retinal rods and

cones, there is a substance that is luminous under the fluorescence microscope. The luminous substance is rapidly dissolved under the influence of ultra-violet rays. The author observed also that the droplets of some animal products and of various synthetic vitamin A preparations have the same luminescence. According to measurements with the spectral ocular and on the basis of their deviations they are probably the result of carotene admixtures in the organs of rats deprived of vitamin A for long periods, the luminous substance is either absent, or present in small quantities. The author concludes that the luminous substance is either identical with vitamin A or represents some form of the vitamin. Further study on this interesting revelation should bring some new knowledge of metabolism, and apparently strengthens belief that the visual photometer is a very accurate method of measuring the vitamin A content of the system.

RELATION OF VITAMIN A DEFICIENCY TO BLOOD

As observed in a previous series of cases reported there was an improvement produced in the appetite and vigor of patients with far-advanced pernicious anemia by the use of large doses of carotene in oil. Further studies made since that time have shown that in early cases of anemia, a large dosage of carotene in oil has resulted in an improvement in both hemoglobin and red cells. Sandler³⁰ reports a series of patients observed over a period of eleven months who showed a ten to twenty-five per cent increase in hemoglobin and an increase of from 500,000 to 1,500,000 red cells. These children also showed an increase in the number of white blood cells, marked general improvement and reduction in the number of infections.

Cramer³¹ has found that the absence of fat soluble A vitamin from the diet of the rat constantly produces a progressive decrease in the number of blood platelets. This thrombopenia is the only constant lesion encountered in deficiency of this vitamin and is characteristic, just as lymphopenia is characteristic of deficiency of water soluble vitamin B. Further study on a large group of cases should prove interesting and show the action of vitamin A on blood-forming organs.

CASE HISTORIES

From a most recent group of vitamin A deficient patients I have studied, the following brief case histories are some of the new theories advanced in this paper:

Case 1. Miss A, aged twenty-three, office worker, had an uneventful past history with the exception of an appendectomy about two years ago. She had suffered quite a bit of worry and shock occasioned by sudden deaths in the family. She noted that although her work was not hard she was unusually tired at night and was not rested by sleep; she was nervous and slightly irritable and had been losing some weight. Physical examination showed an anemic, white female who appeared undernourished. A complete blood count showed: Hemoglobin sixty-five per cent; red blood cells, 3,000,000; no abnormal cells found. Otherwise apparently normal. Patient was given twenty-five minims of carotene three times daily with a diet rich in fats and mineral salts. At the end of a month hemoglobin was eighty-five per cent, and the red blood cell count was 4,200,000. The tendency to fatigue was gone and there was one point gained on the visual photometer. This patient was very fair and after exposure to the hot July sun rays she showed a slight carotenemia involving the fingers and the feet. The carotenemia disappeared upon reduction of the dosage of carotene. The patient continued to gain weight and despite acceptance of a new and much more exacting position, does not notice the marked fatigue. There was a slight drop in the hemoglobin following the removal of a vaginal cyst. However, the hemoglobin has returned to normal.

Case 2. Miss B, professional woman, white, aged thirty-three, had been underweight for a number of years and for the past year had been under observation for possible incipient tuberculosis. This patient also had a diagnosis of eczema and had a dry skin.

The visual photometer test showed only three points on the wedge and after taking twenty-six minims of carotene in oil, t.i.d. for two months she showed a gain of two points on the photometer. This gain was maintained also one month after carotene was discontinued.

Without any change in diet, but with in-

creased appetite, the patient gained eighteen pounds in weight and felt better than she had in years.

This patient had been very careful of her diet due to eczema. For years she had eaten the diet of an institution. As soon as a liberal quantity of vitamin A was added to her diet she utilized the normal food intake to put on the necessary weight.. There was also a marked improvement in the skin condition.

Case 3. An Indian boy, aged fifteen, was listless and had a poor appetite. His school grades were poor. On first test this boy showed only two points on the photometer but after taking carotene in oil, t.i.d. for thirty-seven days without change in the diet he showed two points improvement on the photometer. During the summer he has continued to receive carotene in oil, has gained twenty pounds in weight and his teachers report that he is much better in his school work and shows a better play activity than in last year.

CASES SHOWING GRADUAL IMPROVEMENT

Nine cases tested before and after the use of carotene in oil showed one point or more improvement on each test made at intervals of from two weeks to three months. Three or more of these tests were made on each individual. These cases are among the group which I have classed as chronically deficient and have continued to improve clinically in most instances since the use of carotene in oil was discontinued.

CONTROL CASES

Eight children used as controls in the orphanage showed no improvement on the photometer without carotene. However, after giving two of these children carotene for thirty days there was an improvement of two points. Another group of cases showed no increased response to the photometer despite regular doses of carotene. In these cases lack of response was apparently due to severe attacks of measles or mumps, chronic malaria or endocrine disorders. In two instances no obvious explanation for the lack of response was available.

VITAMIN A OR CAROTENE IN OIL THERAPY

In planning any treatment it is always necessary to individualize. No two patients

are precisely alike and in devising an optimal vitamin A therapy one must be guided by a full consideration of the varying factors in the diet, environment, occupation and other things affecting the health of the patient. The presence of chronic infection, glandular disorders, digestive disturbances or alterations of liver function may prevent absorption of the vitamin from the food or its conversion after absorption.

To secure the maximum benefit from vitamin A therapy the diet must be arranged to provide a liberal supply of mineral salts with the assured presence of at least vitamins B and D.

To take advantage of the increase in appetite usually found with the use of large doses of carotene in oil, a well balanced diet, rich in fats is highly essential because the fats, if assimilated, assist in absorbing the fat-soluble vitamins A and D. Increase in weight is apparently due to the deposition of the fat in the tissues through the increased metabolism made possible by large doses of carotene in oil.

Ideally, undernourished children and also the adults who lack vigor, have poor appetites and other symptoms of vitamin A deficiency should be tested with the visual photometer. However, as this is not yet possible, the routine use of carotene in oil is advisable in these types of cases as there are no known contra-indications other than the presence of leukemia and no harm can be done.

In this study on vitamin A therapy, carotene in oil has largely been employed. Carotene in oil has been given in varying doses over long periods of time to several hundred individuals of all types. These cases have been observed for clinical improvement and have been rechecked in many instances six or eight times with the visual photometer.

The following dosage of carotene in oil has been worked out from the studies reported in this paper and in a previous study⁶ comprising several hundred cases.

Five minims, t.i.d. (taken during meals) was determined to be the minimal dose of carotene in oil for infants and children up to six years. In the presence of severe, acute infections or contagious diseases

such as measles or mumps, a larger dose of at least fifteen minims t.i.d. is necessary until the systemic vitamin A storage has been rebuilt.

In adults an initial dose of ten or fifteen minims, t.i.d. is given with meals and increased to 25 minims, t.i.d. This latter dosage is continued for such a time as is necessary to rebuild the vitamin A content of the body. This time in adults varies more than in children. In some cases which may be termed chronic deficiencies, the photometer tests showed a gradual gain and corresponding clinical improvement was noted. Once these individuals had gained sufficient weight and vigor a small dose of carotene in oil daily, usually at least thirty minims, in most cases kept the individual at the same vitamin level, according to the photometer tests, as was obtained under heavy dosages of carotene in oil. A number of individuals who discontinued the use of carotene in oil after a month or so showed a lower reading on the photometer while others on a liberal diet retained a normal reading.

In view of the fact that it has been definitely proven that the natural sources of vitamin A are largely lost or reduced in value during winter months and the incidence of infection is greater, it would appear that all individuals who are not up to par physically and who labor under more or less strain either in school or business should have liberal doses of carotene in oil or other vitamin A products. Though we do not realize the full significance of the vitamins in diet, yet we know enough to justify our urging that every effort possible be made to increase the vitamin A content of real honest-to-goodness foods such as milk, butter, cream and vegetables and to discourage all things that will make a commercial by-play of this important element of the diet.

Taking into consideration the low vitamin content of natural sources of vitamin A during the winter months, the methods used in preparing food in large quantities in institutions, hospitals and other places where a high vitamin content is especially desired, it has been suggested by a well-known administrator that it would be a matter of economy to add a known amount of carotene in oil to the daily diet

of each patient or inmate, rather than to attempt to secure this vitamin by using large quantities of vegetables of doubtful vitamin content.

Our observations have shown that individuals who have had a definite amount of vitamin A added to the same basic diet used for months previously, showed a gain in weight energy and resistance to disease. It would therefore appear that in addition to securing definite results in health, an economy in the food budget could be realized by the addition of known vitamin content using the minimum requirements for health.

CONCLUSIONS

1. The value of the visual photometer has been definitely established as a means for the clinical detection of vitamin A deficiency.

2. An extensive series of tests with the visual photometer on a large group of individuals of various types, has revealed that the diet of the average person is deficient in vitamin A.

3. We have found that those individuals who are active, full of vim and vigor, athletic and apparently realizing optimum health, uniformly show a high test on the visual photometer while those showing low tests on the photometer do not realize optimum health and activity.

4. It has been definitely proven that carotene in oil assists in the regeneration of the visual purple and therefore must also rebuild the vitamin A content of the entire body.

5. It has been proven clinically that when carotene in oil is given the vitamin A deficient individual who is on an average diet, there is an improvement of the patient with often a decided gain in weight, showing that vitamin A assists in the utilization of the food ingested into the system.

As the food of every one is low in vitamin A during certain months of the year, it appears that the routine use of carotene in oil for growing children and adults showing evidence of lowered vitality would be indicated to furnish increased resistance through the increased weight and vigor.

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Clinical Use of Cyclopropane and Tribrom-Ethanol in Amylene Hydrate

Paul M. Wood, New York (Journal A. M. A., January 25, 1936), has used cyclopropane anesthesia in surgical procedures of all types including operations on the central nervous system, abdomen, superficial operations, and obstetric, gynecologic and otolaryngologic operations. It has been administered in various combinations with anesthetic gases and vapors, with or without preliminary medication, including basal narcotics, in 917 cases with only nine total failures. The combined use of cyclopropane and tribrom-ethanol in amylene hydrate will prove satisfactory if careful selection of the patient, adequate apparatus for the administration of cyclopropane and tribrom-ethanol in amylene hydrate, and accurate timing of the anesthetic procedures are considered. To facilitate the preparation and administration of tribrom-ethanol in amylene hydrate, he describes an apparatus and the technic of its use. Although tribrom-ethanol in amylene hydrate tends to depress respiration, and although excessive concentrations of cyclopropane depress it markedly, yet respiratory depression has been absent in all but two cases of this series. The disadvantages of using the anesthesia are: 1. More time is required of the anesthetist than by many other technics. 2. Cyclopropane is inflammable. 3. Special equipment, dependable gages for indicating minimal flow of gases, means for efficient carbon dioxide control and equipment that will not leak are essential. 4. Danger from technical error of administration is greater than with nitrous oxide or ethylene. 5. The prohibitive cost of cyclopropane when not administered by a proper technic, is a definite disadvantage. 6. The technic of combined tribrom-ethanol in amylene hydrate and cyclopropane anesthesia should not be used on patients exhibiting marked disease of the kidneys, liver or rectum. In these patients cyclopropane may be more safely used without tribrom-ethanol in amylene hydrate. The advantages of its use are: 1. There is an unusually wide margin of safety between the therapeutic and toxic dose. Oxygen concentration is always very high. This is a great advantage, especially for patients suffering with anemia, starvation, shock, pulmonary or cardiac disease, or respiratory obstruction. 2. A wide range of depth of anesthesia is available without anoxemia, and the depth is easy to control. 3. Muscular relaxation is definitely increased. 4. Marked contraction of the uterine muscle following cesarean section has been reported by several operators. In these cases cyclopropane and oxygen were used without preliminary medication or basal narcosis. 5. In the combined use of cyclopropane with tribrom-ethanol in amylene hydrate by the technic outlined, there has been a decrease in operative and post-operative morbidity. 6. The psychic advantage of tribrom-ethanol in amylene hydrate is marked, as no other method of induction of anesthesia is more pleasant to the patient. Apprehension is reduced. 7. The combined use of these two agents is proving satisfactory to the surgeon, the patient and the anesthetist by providing an efficient, pleasant and safe anesthesia.



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EDITORIAL

THE ENID MEETING

The medical profession of Enid is entitled to the most hearty congratulations from the medical profession of Oklahoma for the excellent manner in which they entertained the State Medical Association. The crowd far exceeded all expectations, as over five hundred were registered, and there were ample facilities to care for this large registration.

The hotel facilities were adequate and we heard no complaints as to the service rendered. While it was necessary to divide the exhibits, the commercial exhibits being held at the Youngblood and the scientific exhibits at the Oxford, they were liberally patronized and all exhibitors felt

that they had been well repaid for their time and effort.

A very noticeable feature was the attendance at the Sections. All Sections were crowded, the papers presented were well above the average and the discussions were participated in by many of those in attendance.

Our guest speakers were well received and contributed a great deal toward making the meeting well worth while.

The Auxiliary had probably the largest out of town attendance that they have ever had and at the luncheon the attendance was nearly twice the number they had expected. The ladies were royally entertained by the wives of the Enid physicians and came away expressing themselves as delighted with all the features of their entertainment.

There was much enthusiasm demonstrated at the meetings of the House of Delegates, many of the Delegates participating in the discussion and their discussion showed that they had given many of the economic subjects, pertaining to medicine, considerable thought.

Dr. Sam A. McKeel, Ada, was elected President-Elect and is that sort of doctor whom you will all agree will capably represent organized medicine in Oklahoma.

A synopsis of the minutes of the Council and House of Delegates will follow in this issue, and I am sure all the doctors will feel that some careful thought has been given to some of our most urgent problems.

If you did not go to Enid you missed a fine meeting with excellent scientific discussions and good entertainment.

ANNOUNCEMENT

At a meeting of the Board of Regents of the Oklahoma University April 1st the following changes were made in the faculty of the Medical School.

The Department of Epidemiology and Preventative Medicine was changed to the Department of Hygiene and Public Health with Dr. Onis G. Hazel as head.

Dr. W. K. West was designated acting

head of the Medical School's Department of Orthopedic Surgery during the leave of absence of Dr. Samuel R. Cunningham.

The resignation of Dr. L. C. McHenry from the school's faculty was accepted.

A leave of absence was granted Dr. Lee K. Emenhiser, acting head of the Department of Anatomy, to continue post graduate study.

Editorial Notes—Personal and General

DR. C. S. WALLACE, Holdenville, who has been ill, is reported improved.

DR. T. B. FELIX, Holdenville, is reported much improved following a hernia operation.

RESOLUTIONS

DR. PAUL C. GEISSLER

Whereas, The Tulsa County Medical Society having lost one of its members, Dr. Paul C. Geissler, whose death occurred March 16, 1936, and, whereas, we regret, as do a host of friends and colleagues, his untimely death.

Therefore, Be it resolved by the Tulsa County Medical Society that our sympathy be extended to his family and friends.

Be it further resolved, that these resolutions be incorporated in the records of this society and that a copy be sent to the members of Dr. Geissler's family.

Roy L. Smith, M.D., Chairman
Resolutions Committee.

DOCTOR JOSEPH ERWIN WALKER

Dr. Joseph Erwin Walker died at his home, 1829 North Broadway, Shawnee, Oklahoma, March 21, as a result of leukemia. He was born March 19, 1878, at Plevna, Alabama, but moved to Texas when a boy. He received his medical education at Baylor University, Waco, Texas. He came to Earlsboro, Oklahoma, in 1906 and moved to Shawnee in 1918. Dr. Walker was the Pottawatomie County Health Officer for twelve years. At the time of his death he was the county chairman of the democratic party, which office he had held for four years. He had been a member of the Pottawatomie County Medical Association for twenty-eight years. He was a member of the Methodist church, South. In 1909 he married Miss May Bender, who survives him. He is also survived by two daughters, Mrs. Donald Ellis, and Sue May Walker, and a son, Erwin Walker.

Funeral services were held at the Gaskill Chapel and were conducted by Rev. R. E. L. Morgan with interment in Resthaven Memorial Park.

TRANSACTIONS OF THE FORTY-FOURTH ANNUAL SESSION OF THE OKLAHOMA STATE MEDICAL ASSOCIATION, ENID, APRIL 6, 7, 8, 1936

THE COUNCIL

April 6, 1936, 3 P. M.

Meeting called to order by the President, Dr. Ritzhaupt, with the following members present: Doctors Ritzhaupt, Osborn, Templin, Speed, Risser, Chase, Livermore, McKeel, Adams, Fulton and Willour.

On motion of Dr. Speed, which was carried unanimously, Dr. J. D. Osborn, Jr., of Frederick, Secretary of the State Board of Medical Examiners, was given permission to participate in the meeting.

The minutes of the Council meeting of January 5, 1936, were read and approved without correction.

Dr. Speed was then called upon for a report as to the activities of his Committee, in which an attorney was authorized to look into the subject of revocation of licenses of certain irregulars, and he reported that after consultation with Mr. J. Berry King, of Oklahoma City, it was his opinion that under the present Medical Practice Act it would be impossible to make a revocation of license stand up before the State Supreme Court. He further advised that a new Medical Practice Act be written (a copy of which was submitted to the Council) and effort be made to pass it during the coming meeting of the Legislature. A copy of the proposed Medical Practice Act was submitted and it was briefed for presentation to the House of Delegates.

The President then called for a report of the Auditing Committee composed of Drs. Fulton, Adams, and McKeel. They reported that their audit showed the books to be correct; all money being properly accounted for and action of the Council of a year ago relative to the cashing of \$4000.00 in Liberty Bonds being complied with. On motion of Dr. Templin, duly seconded, the Auditing Committee's report was accepted.

The Secretary-Treasurer-Editor reported that of the \$861.75 reported as bills receivable \$287.00 had been paid since the audit, leaving a balance to be collected of \$574.75.

Dr. Osborn was then heard by the Council at which time he discussed the subject of irregular practice in cooperative hospitals and said that the Medical Board of Examiners has the power to revoke, suspend or put men on probation under certain conditions defined in the Medical Practice Act, and he further stated that he felt sure that if these charges were presented in proper form before the Board that the licenses would probably be revoked, but he considered the advice of Mr. King is such that it should be accepted by the Council and careful consideration should be given these matters before charges were preferred before the Board.

He assured the Council that the Governor of the State was in complete sympathy and accord with organized medicine of Oklahoma and that he had expressed himself in the following words: "I have appointed the Medical Board and am going to let the Medical Board run it."

Dr. Tisdal of Elk City, was then presented to the Council and discussed freely and intelligently the subject of cooperative hospitals in his section of the state.

The meeting of the Council adjourned to reconvene April 7th at 3 P. M., at which time Mr. J.

Berry King was to be presented and advise with the Council as to further action.

L. S. WILLOUR,
Secretary-Treasurer-Editor.

THE COUNCIL April 7, 1936, 3 P. M.

Meeting called to order by the President, with the following present: Doctors Ritzhaupt, Fulton, Adams, Chase, McKeel, Speed, Walker, Templin, Osborn, and Willour.

A telegram from Mr. J. Berry King, read by the President, which stated that he would be unable to attend the meeting of the Council.

The matter of increase of dues and solicitation of funds to carry on the affairs of the State Medical Association was freely discussed and the method of carrying out this matter was left to the Legislative Committee. The amount of increase of dues to be \$4.00, making the annual dues \$8.00 per member to the State Association.

The method of finance will be announced later by the Legislative Committee.

The new Legislative Committee was selected by the President-Elect to be Drs. H. K. Speed, Sayre; McLain Rogers, Clinton; E. O. Barker, Guthrie. Dr. Speed to act as Chairman.

A bill from the Committee on Fellowship was presented and allowed.

According to the recommendations of the House of Delegates \$200.00 was allowed to the Committee on the Study and Control of Cancer, and sufficient funds allowed the Committee on Post Graduate Medical Teaching to bring the amount to \$1200.00.

By motion, seconded and carried, the Council adjourned.

L. S. WILLOUR,
Secretary-Treasurer-Editor.

HOUSE OF DELEGATES April 6, 1936, 8 P. M.

Meeting called to order by the President, Dr. Ritzhaupt.

Motion made, seconded and carried that the reading of the minutes of the last meeting of the House of Delegates be dispensed with as they were published in the June issue of The Journal.

The President then called upon the Secretary to give a verbal report of the Council Meeting, January 5, 1936, at Oklahoma City. The Secretary reported that at this time routine business of the Council was accomplished. Arrangements for the Annual Meeting at Enid discussed and dates set. At this meeting there was a liberal discussion of some irregularities throughout the State in the form of contract practice, and authority was given the Council to obtain legal advice relative to proper procedure against these irregularities.

Motion was made, seconded and carried that the verbal report of the Secretary be accepted.

The Secretary at this time was called upon to analyze the Secretary's report, which was done and on motion, duly seconded the report was accepted and approved.

On motion of the President the report of the Committee on Maternity and Infancy was read and on motion of Dr. Baker, Enid, and seconded by Dr. Adams, Vinita, the report and their recommendations were accepted.

Next was presented the report of the Committee on Post Graduate Medical Teaching. The Committee wished to express their thanks to Mr. L. W. Kibler for his assistance and the Committee re-

quested that the appropriation of a sufficient amount to bring the fund back to the original sum of \$1200.00 be made. On motion of Dr. Willour, seconded by Dr. Kuhn, the above recommendation carried.

Next was read the report of the Committee on Medical Economics, as published in The Journal, and it was estimated that to carry out their recommendations would require the sum of between \$2500.00 and \$3000.00. On motion of Dr. Aisenstadt, duly seconded, it was unanimously agreed that their recommendations be referred to the Council for action.

A report of the Committee on Medical Education and Hospitals was then brought before the House. Dr. Reed suggested that their recommendation be amended to read, "The standards of the American College of Surgeons and the standards that are made by the American Medical Association."

The amended report was unanimously adopted.

Report of the Committee on Fellowship was adopted as published in The Journal.

Report of the Committee on the Study and Control of Cancer was next presented. The report was adopted carrying with it a request that \$200.00 be set aside for the expense of this Committee where it was impossible for the County Society to meet the expense of a visitation.

The following Committees failed to present reports to The Journal for publication or to the House of Delegates: Conservation of Vision, Crippled Children, Industrial and Traumatic Surgery, Study and Control of Venereal Diseases; Study and Control of Eugenics, Study and Control of Tuberculosis, Federal Emergency Relief Medical Service, Study and Encouragement of Rural Practice, Public Policy and Legislation.

At this time the Committee on Credentials made their report.

The President then appointed a Committee on Resolutions, composed of Drs. Tisdal of Elk City, Walker of Shawnee, Stevenson of Tulsa, and Pounders of Oklahoma City. He also appointed a Committee on Publicity composed of Drs. Baker of Enid, A. W. Pigford of Tulsa, Rollins of Prague and G. A. Harris of Hugo.

Dr. Baker then presented a resolution on Juvenile Delinquency which was referred to the Resolutions Committee.

On motion of Dr. Glismann, duly seconded, Dr. W. S. Watson, Okmulgee, was made an honorary member of the Oklahoma State Medical Association.

On motion of Dr. Starry, seconded by Dr. W. A. Cook, Dr. W. J. Jolly, of Oklahoma City, and Dr. J. A. Hatchett, Oklahoma City, were made honorary members of the Oklahoma State Medical Association. Dr. Starry recommended that Dr. Jolly be an affiliated member of the American Medical Association. Carried.

Motion made, seconded and carried that the House of Delegates adjourn.

L. S. WILLOUR,
Secretary-Treasurer-Editor.

HOUSE OF DELEGATES April 7, 1936, 8 A. M.

Meeting called to order by the President and report of the Credentials Committee called for. Roll call showed the vote of the House of Delegates to be eighty.

The President then called for nominations for the office of President-Elect. Dr. E. S. Ferguson,

Oklahoma City, placed the name of Dr. Milton K. Thompson, Muskogee. Dr. J. S. Fulton, Atoka, placed the name of Dr. Sam A. McKeel, Ada. Dr. A. M. McMahan, Duncan, placed the name of Dr. D. Long, Duncan. On motion made, seconded, carried, nominations closed, ballot taken. There not being a majority for any candidate in the first ballot the name of Dr. D. Long was dropped and the House proceeded to vote upon the names of Drs. Thompson and McKeel. Dr. McKeel, receiving the majority of votes, was declared elected President-Elect of the State Association.

The next order of business was the election of Delegates to the American Medical Association and the names of Dr. W. Albert Cook, Tulsa, and Dr. Horace Reed, Oklahoma City, were presented. On motion, seconded, the nominations were closed and the Secretary instructed to cast the ballot of the House of Delegates for these two delegates. The President then declared Dr. Cook and Dr. Reed elected Delegates to the American Medical Association.

The next order of business was the selection of Councilors for Districts 7, 8, 9 and 10. For Councilor District No. 7, the name of Dr. J. A. Walker, Shawnee, was presented; for District No. 8, the name of Dr. E. A. Aisenstadt, Picher, was presented; for District No. 9, Dr. L. C. Kuyrkendall, McAlester, was presented; for District No. 10, Dr. J. S. Fulton, Atoka, was presented.

On motion duly made, seconded and carried, the Secretary was instructed to cast the ballot for these Councilors. This having been done the President declared them elected.

The report of the Necrology Committee was next presented and is as follows:

Mr. President and Members of the Oklahoma State Medical Association:

Another year has taken its toll of our colleagues. It is with mingled pride and regret that this Committee pays tribute to those departed. As representatives of the State Medical Association we express our heartfelt sympathy to friends and relatives of the deceased.

It is most appropriate that we express our gratitude to these men in the immortal words of Robert Louis Stevenson:

There are men and classes of men
That stand above the common herd—
The soldier, the sailor, the shepherd not
infrequently.

The artist rarely, rarer still the clergyman,
The physician almost as a rule.

He is the flower of our civilization,
And when that stage of man is done with
Only to be marvelled at in history,
And he will be thought to have shared but
little in the defect of the period,
And to have most notably exhibited the
virtues of the race.

Generosity he has, such as is possible only
to those who practice an art,
And never to those who drive a trade; discretion,

Tested by a thousand secrets; tact,
Tried in a thousand embarrassments and
what are most important,

Herculean cheerfulness and courage
So it is that he brings air and cheer to the
sick room

And often enough, though not as often as
he desires, brings healing.

The following is a list of our deceased members since April, 1935:

V. H. Barton, McAlester.
Martha Bledsoe, Chickasha.
Chas. P. Brown, Oklahoma City.
A. E. Carlock, Hartshorne.
A. G. Childers, Mulhall.
J. J. Clark, Tishomingo.
T. J. Colley, Hominy.
W. M. Cott, Okmulgee.
J. E. Davis, McAlester.
T. J. Dodson, Norman.
G. O. Dunseth, Tulsa.
Paul Geissler, Tulsa.
Harrell Hardy, Poteau.
Ray R. Hume, Minco.
Alva Jones, Sapulpa.
James C. Johnston, McAlester.
Forrest S. King, Muskogee.
W. M. Leslie, Blackwell.
James M. Mattenlee, Sapulpa.
J. T. Moon, Miami.
O. H. Parker, Custer City.
J. J. C. Rembert, Okmulgee.
Wm. J. Risen, Hooker.
Frank H. Robertson, Blackwell.
M. M. Roland, Oklahoma City.
H. D. Shankle, Ohio.
Millington Smith, Oklahoma City.
J. M. Stemmons, Collinsville.
Roy M. Sweeney, Sapulpa.
Dean Widener, Okmulgee.
J. P. Williams, Picher.

Committee on Necrology: J. M. Alford, Oklahoma City, Chairman; G. W. Baker, Walters; Roscoe Walker, Pawhuska.

On motion of Dr. J. A. Walker, which unanimously carried, the House of Delegates stood for one minute in silence in memory of our dead.

The following resolution on Juvenile Delinquency, presented by Dr. R. C. Baker, Enid, was unanimously accepted:

RESOLUTION

WHEREAS, the laws of Oklahoma relating to juvenile delinquency limit the jurisdiction of the juvenile court to children under sixteen years of age, and

WHEREAS, common experience and the experience of the medical profession has demonstrated that the most dangerous age for juvenile delinquents, and particularly venereal diseases of delinquent children occur after said children have reached the age of sixteen years, and

WHEREAS, there are no adequate means provided by our laws to deal with this very serious problem after delinquents have reached the age of sixteen years, and

WHEREAS, the welfare of these delinquents themselves and of society at large imperatively demands that these delinquents be amenable to adequate legal solution, now,

THEREFORE BE IT RESOLVED by the Oklahoma State Medical Association in State Convention assembled this sixth day of April, 1936, that it is the deliberate sense of this association that the Laws of Oklahoma relating to juvenile delinquents should be amended to extend the jurisdiction of the Probate Court over all delinquent children during their minority.

BE IT FURTHER RESOLVED that the Legislative Committee of this association be, and is hereby ordered to call this situation to the attention of the Oklahoma State Legislature and use its best efforts to effect an amendment to our

juvenile delinquency laws in conformity with the views and purposes of this resolution.

Passed and approved by unanimous vote of this association this sixth day of April, 1936.

Submitted by Roscoe C. Baker, Delegate Garfield County, D. B. Ensor, Delegate Woods County, O. H. Cowart, Delegate Creek County.

Approved by Committee on Resolutions, V. C. Tisdal, Chairman, J. A. Walker, C. M. Pounders

The Resolutions Committee next presented a resolution regarding an Executive Secretary, signed by Drs. H. Dale Collins, E. S. Ferguson and Horace Reed, all of Oklahoma City, which after discussion was unanimously adopted.

After considerable discussion as to irregular practices, particularly in the western part of the state, it was recommended that the dues of the State Association be increased to \$8.00 per year.

At this time the President called upon Dr. E. O. Barker to read the report of the Committee on Public Policy and Legislation, which was adopted. It is as follows:

REPORT OF LEGISLATIVE COMMITTEE

The time has now arrived for a grass roots campaign against State Medicine, and every doctor who did not hear the debate broadcast Tuesday, November 12th, 1935, between one and two p. m. over the National network from Chicago, should avail himself of a copy of this debate. In this broadcast the affirmative phase was discussed by Wm. F. Foster and Bowen Aly, and the negative phase was ably discussed by Morris Fishbein, M.D., and R. G. Leland, M.D. Readers of this debate will realize the seriousness and the immediate danger which confronts us if we sit back and "let George do it." The non-medics and some lawyers will continue to make a fat living and dictate prices and the manner in which the American doctors can conduct their practice. The committee believes that the A. M. A., backed by the State and County Societies can most effectively oppose State Medicine, or at least propose something better. This may be accomplished by a publicity campaign by a corps of speakers made available by the A. M. A. to State Medical Societies and by radio talks, newspaper and magazine articles. This topic has failed to get the support of A. M. A. delegates on different occasions, and the committee on legislation unanimously recommends that the authorities of the State Association instruct the delegates to the A. M. A. to make every effort to have the A. M. A. sponsor a definite program to accomplish this.

The Surgeon General, Dr. Thomas Parren, Jr., wants socialized medicine, and if Dr. Parren's plan is put into force, many doctors in the United States will be obliged to take city, state and federal jobs.

In the vicinity of New York, there are now one hundred seventy-four hospitals having a hospitalization plan with 65,000 prospective patients; other cities which have hospital plans are Dallas, San Antonio, Houston, New Orleans, Memphis, Sacramento, Minneapolis, St. Paul, Cleveland, Rochester, Durham, Newark, N. J., and Oklahoma City. Statistics show that four hundred people are now enrolling each day.

As soon as hospitalization and group practice get under way, there will be a strife among the groups; this will be the beginning of the end, especially for the doctor who does not have some hospital connection.

There should be, if possible, some legislation in this State to prevent charity cases from bringing suits to collect alleged damages against a hospital or doctor for services which they have received

free; also legislation preventing any person bringing a suit against a hospital or doctor after a specified time, which should not be over three years. Why should one risk his lifetime savings for nothing? Yes, few carry insurance, but this does not pay for undesirable advertising.

We believe the Crippled Children's law is a misnomer as worded. The law includes any person under twenty-one years of age, suffering from acute appendicitis or heart trouble, as well as chronic deformities, such as club feet, etc.

Our Medical Practice Act poorly regulates the M.D.'s, and permits all others to do as they please, and it is high time something along this line should be done. If you think this will care for itself, just go to some cult's stairway and count the number of people entering during one day, then compare. It matters not who you are, or where you are, the cold facts will give you the jitters. Take a day off on election day and use your influence at the polls. When you arrive at the voting place, you will find the cult is already there, using his influence and money, because he knows that **LEGISLATORS FAVOR THOSE WHO ELECT THEM.** This was exemplified by our last legislature. The verdict was rendered, and sealed, before the hearing took place, and the M. D.'s got the horse laugh. In fact, there were only a few legislators present at the hearing, yet the senate chamber was full of drugless healers. Legislators will listen before they are elected, and each county society should organize the doctors, dentists, druggists and nurses and demand that each candidate for the Senate and House of Representatives is willing to give the medical profession a new and fair deal. It takes money to do this. Five dollars per member would raise \$7,500. This, with each and every doctor's influence at the polls would get the job done.

The council has a committee of three, i. e., Dr. L. H. Ritzhaupt, President of the State Association, Dr. L. S. Willour, Secretary of the Association, Dr. H. K. Speed, Councilman, who has retained J. Berry King, our former attorney general, to rewrite the Oklahoma laws regulating the practice of medicine and surgery, and is patterned after several other state laws. The committee on public policy and legislation, recommends that the same committee be retained, with the addition of the incoming President, and instruct this committee to present to the next legislature whatever legislation is needed to regulate and control every person who treats the sick.

Fight now for your existence. For once the doctors should agree and work together for some legislative program backed by the State Association.

C. B. Barker, Guthrie.
J. S. Fulton, Atoka.
McLain Rogers, Clinton.

Dr. Pigford, Tulsa, then presented a resolution recommending that the office of Speaker of the House of Delegates be created. The Speaker to be elected by the House of Delegates and to serve a term of three years. The President ruled that this being an amendment to the Constitution, the resolution lay over until the next annual meeting.

At this time nominations for the meeting place of 1937 were called for and Dr. Larrabee of Tulsa, on behalf of the Tulsa County Medical Society, invited the Association to meet in that city. On motion of Dr. W. A. Cook, duly seconded, nominations closed, and Tulsa was named the next meeting place.

The House of Delegates then adjourned.

L. S. WILLOUR,
Secretary-Treasurer-Editor.

AMERICAN MEDICAL GOLFERS PLAY IN KANSAS CITY, MONDAY, MAY 11th

The American Medical Golfing Association will hold its twenty-second annual tournament at the Mission Hills Country Club and the Kansas City Country Club in Kansas City on Monday, May 11, 1936.

To accommodate comfortably the large entry which is anticipated, the Kansas City Committee has arranged play over two very fine courses which touch corners: the Mission Hills Country Club and the Kansas City Country Club. Their club houses are only one mile apart and ample transportation between the two has been arranged. Dinner for all players will be served in the Mission Hills Club House.

Seventy Trophies and Prizes

Thirty-six holes of golf will be played in competition for the seventy trophies and prizes in the nine events. Trophies will be awarded for the Association Championship, thirty-six holes gross, the Will Walter trophy; the Association Handicap Championship, thirty-six holes net, the Detroit trophy; the Championship Flight, first gross, thirty-six holes, the St. Louis trophy; the Championship Flight, first net, thirty-six holes, the President's trophy; the Eighteen Hole Championship, the Golden State trophy; the Eighteen Hole Handicap Championship, the Ben Thomas trophy; the Maturity Event, limited to Fellows over sixty years of age, the Minneapolis trophy; the Oldguard Championship, limited to competition of past presidents, the Wendell Phillips trophy; and the Kickers Handicap, the Wisconsin trophy. Other events and prizes will be announced at the first tee.

1150 A.M.G.A. Members in Every State in the Union

Dr. M. M. Cullom of Nashville, Tennessee, is president and Dr. W. Albert Cook of Tulsa, Oklahoma, and Dr. Walt P. Conaway of Atlantic City are vice-presidents of the American Medical Golfing Association, which was organized in 1915 by Dr. Will Walter, Dr. Wendell Phillips and Dr. Gene Lewis, and now totals 1,150 members representing every state in the union. The living past presidents include Dr. Thomas Hubbard of Toledo, Dr. Fred Bailey of St. Louis, Dr. Edward Martin of Media, Pa., Dr. Robert Moss of LaGrange, Texas, Dr. Charlton Wallace of New York, Dr. Will Walter of Chicago and Charlottesville, Va., Dr. James Eaves of Oakland, Calif., Dr. Chester Brown of Danbury, Conn., Dr. Samuel Childs of Denver, Dr. W. D. Shelden of Rochester, Minn., Dr. Walter Schaller of San Francisco, Dr. Edwin Zabriskie of New York, Dr. Frank A. Kelly of Detroit, Dr. John Welsh Croskey of Philadelphia, Dr. Homer K. Nicoll of Chicago, and Dr. Charles Lukens of Toledo.

Kansas City Golf Committee

The Kansas City Committee is under the general chairmanship of Dr. Clarence Capell, Rialto Building, Kansas City, Mo. He will be assisted by Drs. A. W. McAlester, Jr., Logan Clendenning, and A. C. Griffith, on entertainment; Drs. A. E. Jones, E. R. DeWeese, C. A. McGuire, D. A. Williams, Cliff Mullen, Lewis Allen, and Harold Roberts, on prizes; Dr. A. S. Welch on publicity; Drs. T. A.

Kyner, J. S. Snyder, Clarence Sanders, on transportation; Drs. C. D. Cantrell and J. Q. Chambers, on scoring; Drs. Chas. C. Dennis and Kip Robinson, on starting.

Application for Membership

All male Fellows of the American Medical Association are eligible and cordially invited to become members of the A.M.G.A. Write the Executive Secretary, Bill Burns, 2020 Olds Tower, Lansing, Michigan, for an application blank. Participants in the A.M.G.A. Tournament are required to furnish their home club handicap, signed by the secretary. No handicap over thirty allowed, except in the Kickers' (Blind Bogey). Only active members of the A.M.G.A. may compete for prizes. No trophy is awarded a Fellow who is absent from the annual dinner.

The twenty-second tournament of the American Medical Golfing Association promises to be a happy affair. The officers anticipate that some two hundred medical golfers from all parts of the United States will play in Kansas City on May 11th.

Annual Meeting of Association on Mental Deficiency Scheduled for May 1 to 4

The American Association on Mental Deficiency composed of some five hundred educators, psychologists, sociologists, and psychiatrists, is holding its sixtieth annual meeting at the Hotel Jefferson, St. Louis, Mo., on May 1, 2, 3 and 4. The Friday sessions will be devoted to General and Sociologic aspects of mental deficiency; the Saturday sessions to Psychological and Educational topics with special stress on Educational Disabilities. The Monday sessions will be given over to Research Activities, Medical Aspects and Administrative Problems in mental deficiency.

Some of the speakers are:

Popenoe on "Sterilization," Goddard on "Social Security," Hincks on "A National Program," Kirkbride on "Public Welfare," Hackbush on "Social Service," Vanuxem on "Education," Berry on "Teaching Techniques," Humphreys on "Research Problems," and many others.

Everyone interested in the mentally defective or retarded child is cordially invited to attend these sessions. The complete program may be obtained from the Secretary, Dr. Groves B. Smith, Godfrey, Illinois.

Conference on Rheumatic Diseases May 11th

The American Association for the Study and Control of Rheumatic diseases is holding its fifth conference on rheumatic diseases at the Phillips hotel, third floor, on May 11th at nine o'clock in Kansas City.

Paul C. Geissler Memorial Fund

A donation was received by the Tulsa County Medical Society to form the nucleus of an endowment fund for the library to provide books and journals on anesthesia. This will be called the Paul C. Geissler Memorial Fund.

Licensed to Practice Medicine During February, 1936

NAME	Year of Birth	Place of Birth	School of Graduation	Year of Graduation	Permanent or Present Address
Smith, Ralph Argyle	1909	Edina, Missouri	St. Louis Univ. Med.	1934	Olahoma City, Okla.

ABSTRACTS : REVIEWS : COMMENTS and CORRESPONDENCE

ORTHOPAEDIC SURGERY

Edited by Earl D. McBride, M.D.
717 North Robinson Street, Oklahoma City

The Role of the Iliotibial Band and Fascia Lata as a Factor in the Causation of Low-Back Disabilities and Sciatica. Frank R. Ober, M.D., Journal Bone and Joint Surgery, Vol. XVIII, No. 1, January, 1936.

The author directs attention to the pain along the course of the sciatic nerve which causes very distressing symptoms that are very difficult to relieve. He has made the observation that in cases in which arthrodesis has been done in the sacro-iliac joint, relief of symptoms often comes very quickly following the operation. He points out that this cannot be due to the bone immobilization of the sacro-iliac because relief comes long before the fusion of bone occurs. He also cites the case of a colleague who undertook to do a fusion on the sacro-iliac joint, but after making the wide Smith-Peterson incision no bone pathology was found and the wound was closed. Much to the surprise of the surgeon, the patient was relieved completely.

His conclusions are that relief of symptoms is probably due to releasing the fascial pull exerted through the fascia lata and its attachments to the gluteus maximus muscle. He cites the extensive attachments of the iliotibial band and fascia lata and shows that when there is a shortening of the iliotibial band and its fascial expansion there is an abduction contraction of the femur, resulting in a tremendous leverage action on the sacro-iliac and lumbo-sacral joints.

The sciatic nerve lies beneath the gluteus maximus and any contraction of the fascia lata must exert muscular pressure on this nerve. The symptoms in a person with contracted fasciae latae and iliotibial bands are those of pain in the lumbo-sacral and sacro-iliac joints. If there is a marked lumbar lordosis it is likely that there is pain in the dorsal region as well, or even in the cervicodorsal junction. There may be muscle spasm, limitation of motion and tenderness over the lumbo-sacral and sacro-iliac regions and posterior to and just below the greater trochanters, sciatic scoliosis, limitation of straight-leg raising, positive Ely's sign, and functional scoliosis if the abduction contracture is unilateral.

The method of eliciting the abduction sign is as follows: The patient lies on his side, with the thigh next to the table and flexed enough to obliterate any lumbar lordosis. The upper leg is flexed at a right angle at the knee. The examiner grasps the ankle lightly with one hand and steadies the patient's hip with the other. The upper leg is abducted widely and extended so that the thigh is in line with the body. If there is any abduction contracture, the leg will remain more or less passively abducted, depending upon the shortening of the iliotibial band.

The operation was described previously by Dr. Ober in the Journal American Medical Association, CIV, 1580, 1935. He makes an oblique incision and begins at a point a little lateral to the anterior iliac spine, extending downward and backward to a point about one inch posterior to and one inch above the greater trochanter, exposing the fascia lata. The iliotibial band and fascia lata are next incised posteriorly well over the anterior portion of the gluteus maximus muscle. The incision is then carried forward to a point just below the anterior-superior spine and includes the fascia surrounding the tensor fasciae latae. All inter-muscular septa in this region are divided. The fascia is separated by blunt dissection until there is a gap of two inches.

In quoting the results since May 2, 1934, the author and his associates have operated upon forty-two patients. The left side was affected in fourteen cases and the right in twelve, making a total of twenty-six cases of unilateral involvement. There was bilateral involvement in sixteen cases. In a few there has been relief at operation. In most cases the relief from pain in the sciatic nerve began from the fifth to the tenth day after operation. A few cases had marked diminution of sciatic pain, but slight twinges have persisted. There was one case of moderate recurrence ten weeks after operation, following a two-day motor ride of 1,000 miles.

The lame back clears up from six weeks to six or eight months, usually. The motions of the spine return to normal and the sciatic scoliosis disappears. Patients with lordotic or flat lumbo-sacral angles improve so that nearly a normal lumbar lordosis results. Posture improves, the increased compensatory curves decrease, and pain at the root of the neck disappears.

Evolution Clinica de Los Injertos Oseos (Clinical Evolution of Bone Grafts). Alberto Inclan. Cir. Ortop. y Traumatol, III, 161, 1935.

After studying the clinical development of the bone graft in some hundreds of cases, Dr. Inclan gives his opinion with reference to the total or partial vitality of bone grafts, stating that the fate of such a graft depends on the biological purposes for which it is used and where it is implanted. When these purposes have been accomplished, the graft as such disappears and is replaced by newly formed bone which varies in structure according to the physiological demands of statics and dynamics, governed by the laws of Wolff. He states that the bone graft must first become united to the bone and must keep its integrity until the changes which result from its presence have been completely accomplished.

The author then presents a clinical and roentgenographic study of the development of bone grafts in cases of delayed union and psuedarthrosis of fractures, fixation of tuberculous joints, fusion of the spine, stabilization of joints, etc. From this study, the following conclusions are drawn:

1. When a bone graft is employed for fixation

of a fracture in a case of delayed union, the graft will disappear after union is complete.

2. When a bone graft is used for fixation of a fracture and in order to fill the gap between the fragments, the graft changes in structure until it attains the size and shape necessary to compensate for the deficiency.

3. If a bone graft is used for extra-articular arthrodesis of the joints, the integrity of the graft is indispensable and should be maintained until the lesion is healed. Pregression of the lesion without protection of the bone graft may produce loss of integrity of the graft.

4. When a bone graft is used for stabilizing dislocated or relaxed joints, the structure will change according to the role which it is to play. If its purpose is not accomplished, the graft will disappear either partly or entirely.

5. When a bone graft is employed with the object of replacing a large portion of bone, its fixation and osteotrophic action depends upon complete preservation of the graft until the newly formed bone takes on the normal structure; then the bone graft will disappear entirely.

INTERNAL MEDICINE

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By C. E. BRADLEY, M.D.

Purpura in Children. Carroll M. Pounders, M.D., F.A.C.P., Oklahoma City, Okla. *Southern Medical Journal*, March, 1935. Vol. 29, No. 3, Pages 317-23.

The author discusses the history and nature of purpura, points out the characteristic clinical picture, and calls special attention to the fact that the disease is easily identified by proper laboratory procedures. The hemoglobin and red blood cell values are not reduced below normal except in case of hemorrhage; there may or may not be some degree of leukopenia; but the blood platelet count is definitely reduced, usually below 100,000 and often below 60,000. The coagulation time may be normal, but the bleeding time is usually prolonged. The clot does not retract from the test tube.

The author calls particular attention to the fact that many of the commonly advocated therapeutic measures for the relief of purpura such as blood transfusion, calcium therapy, high protein diet, vitamin therapy, ultra-violet ray, iron, antivenin, autolyzed liver, stomach mucosa, epinephrine, non-specific protein therapy, and thromboplastin gave only transitory relief in the cases which he presents (with one exception, one acute case was relieved by transfusion and the intra-venous administration of antivenin), and were beneficial only in so far as they made up deficiencies of the individual patient or prolonged the life of the patient until splenectomy could be performed.

He suggests that splenectomy should be carried out in acute cases that have been carried over by transfusions, and in whom clinical signs and blood picture do not indicate that recovery is taking place, and in all chronic cases whether there is splenic enlargement or not. Of course, it is contraindicated until careful blood study has definitely established the diagnosis, and it is certainly contraindicated when there is a persistent leukopenia with low reticulocyte count.

Brief summaries of thirteen cases of purpura in children observed in the Crippled Children's Hospital of Oklahoma City are presented. Six of the cases were of the chronic type. In one of these splenectomy was performed and the results seemed quite successful, but the child succumbed to pneumonia three days after the operation. Another of these patients planned to return at a later date for splenectomy. Two of the cases presented were not cases of primary thrombocytopenic purpura and were presented merely to illustrate the type of purpura which may develop secondary to infection. Four cases of acute purpura were presented; in one case the patient was completely cured by transfusions and the intravenous administration of antivenin; and in another splenectomy brought complete relief.

Although the author does not feel that present knowledge of purpura hemorrhagica and the lasting and general effect which splenectomy has upon it justifies the opinion that it is a definite cure, he does feel that the almost uniformly good results which have followed splenectomy justify the continued use of this procedure.

The Use of a Blood Coagulant Extract From the Human Placenta in the Treatment of Hemophilia. R. Cannon Eley, M.D., Arda Alden Green, M.D., and Charles F. McKhann, M.D., with the assistance of Israel Kapynick and Harriet F. Coady, Boston, Mass. *The Journal of Pediatrics*, February, 1936, Vol. 8, No. 2, Page 135.

The authors present a study of the effect of human placental extract on the clotting time of normal blood in vitro and in vivo, and on the blood of individuals suffering from hemophilia.

The preparation of the extract from the placentas of non-syphilitic and non-toxic mothers is described. They found the extract to be sensitive to heat, oxidation and aging. An extract which would clot in five minutes a plasma which would normally clot in thirty minutes was considered sufficiently potent for use.

The experiments showed that the extract shortened the coagulation time of fresh citrated human or bovine blood even in dilutions as high as 1:10,000. The clotting time of the venous and capillary blood of rabbits was found to be shortened by the extract for the period of forty-eight to seventy-two hours. Intravenous injections of the extract proved fatal to the laboratory animals, but small doses given intramuscularly, subcutaneously, or intraperitoneally were not lethal but shortened the coagulation time of both capillary and venous blood for variable periods.

The extract (five c.c. given orally) reduced the clotting time of a normal individual's venous blood from six and one-half to one and one-half minutes in thirty minutes, and the clotting time of capillary blood from two and one-half to one and one-half minutes. At the end of five hours the clotting time had returned to normal. This indicated that the effect of the extract was the same as Mills had observed the administration of bovine lung extract to be.

The authors present a series of fifteen cases suffering from hemophilia who were treated with extracts from human placenta. The extract was given after fasting to lessen the effect of digestive enzymes on the extract, and they found that the extract was more easily absorbed when it was given in sodium bicarbonate or alkaline carbonated water than in ordinary ice water.

The intramuscular injection of sterile solutions

of the extract gave no ill effects, although it was not given unless unsuccessful results were obtained from the oral administration of the extract, and then great care was exercised to avoid intravenous injection. Older children have been found more resistant to the oral administration of the extract than younger children.

The effects of the extract when given orally were demonstratable in twenty to thirty minutes while the effect of the extract administered intramuscularly was not demonstratable for several hours.

Eleven of the series of fifteen children with hemophilia showed a satisfactory response to the extract as their respective coagulation times were reduced so they came within the maximum normal limit of ten minutes. Although in the other four cases there was some reduction in the coagulation values, the end point was not sufficiently low for the authors to consider the treatment satisfactory.

The authors present two cases in detail showing that these children were able to lead normal, fairly active lives while receiving the extract, while previously their activities were very limited due to the ease with which hematomas and hemarthrosis from trauma occurred, and that the extract could be taken without detriment over long periods of time. However, they suggest that a much larger series of cases will have to be studied before any definite conclusions can be drawn.

The authors also demonstrated the beneficial effect of local applications of the extract in controlling hemorrhage.

EYE, EAR, NOSE AND THROAT

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Diagnosis and Treatment of Anisophoria. Jonas S. Friedenwald, M.D., Baltimore. *Archives of Ophthalmology*, February, 1936.

The importance of anisophoria is emphasized in this article. His method of measurement is given. There is a discussion of the physiologic horizontal, vertical and torsional anisophoria. This is followed by a description of pathologic anisophoria with the three optical methods used for its correction. There are four cases reported in which anisophoria resulted from the correction of the anisometropia. These are given at some length and quite detailed. Critical discussions follow the article by Dr. Walter B. Lancaster, Boston; Dr. F. H. Adler, Philadelphia; and Dr. Conrad Berens, New York.

The author's summary and conclusions are: Anisophoria is defined as that form of heterophoria in which the degree of muscular imbalance varies with the direction of gaze. Methods for the detection and measurement of anisophoria are outlined. Anisophoria may be produced by the correction of anisometropia with ordinary spectacle lenses. In these cases it is due to the unequal prismatic action of the peripheral portions of the lenses. Anisophoria may also result from the unequal action of the extra-ocular muscles. In such cases it is usually associated with some heterophoria on direct gaze. The various types of anisophoria produced by the more common forms of rotational inequalities of the eyes are discussed. The physiologic rotational inequalities of the eyes are also discussed, and some relations between these and the pathologic forms of anisophoria are pointed out. Three methods for the correction of anisophoria are described: the use of segments of

prisms; the displacement of reading matter toward the side of the eye which has the greater rotational amplitude, and the magnification of the image for the eye which has the greater rotational amplitude. A rough method for the computation of such magnifying lenses is outlined, and the need in some cases for meridional magnification rather than overall magnification is pointed out. The relative merits and limitations of these three methods for the correction of anisophoria are discussed, and a few illustrative cases are reported showing the third type of correction.

Unusually Severe Pyaemia Following Bi-Lateral Acute Otitis Media: Recovery. L. Hoffman. A. R. Tweedie. *Abstracts of Proceedings of the Austrian Otolological Society. Published in The Journal of Laryngology and Otology*, September, 1935.

In a boy aged nine and a half years, following a sore throat, an acute otitis media occurred on both sides, with a spontaneous perforation at the commencement of November, 1933, and continued until November 20th, 1933, when the condition was associated with a high fever. After an afebrile interval of four days, as the temperature again rose and was accompanied by frequent vomiting, the child was admitted to hospital on November 25th, 1933.

Examination: General picture of severe septic infection with icterus, temperature thirty-six to forty-one degrees C.; enlargement of the spleen and liver. Culturable haemolytic streptococci in the blood. As other sources of infection could be excluded the cause was attributed to the aural condition, which showed profuse bilateral otorrhoea with central perforation of the membranes, but without any oedema of the meatal walls or the post-aural region and no local pain or tenderness. November 30th, 1933. Operation.—Right ear: Purulent mastoid content under pressure. Sinus found lying unusually far forward. Bone chiefly sclerotic and cellular only in the retro-facial area. The antrum was very deep and difficult to discover, but contained only a slight amount of secretion. Puncture of the sinus revealed normal fluid content.

Left ear: Only a small amount of free pus was found. Sinus in almost normal position.

The following day the child had improved, but on December 2nd a painful swelling occurred on the dorsum of the right foot, and as this was an obvious metastasis, and as the right ear was so definitely the chief offender, the right internal jugular vein was ligatured. The temperature rose again that same evening to forty degrees C., accompanied by a rigor. On December 5th a very painful septic infection occurred in the left hip joint, but the general condition of the child improved.

On December 9th to 14th, 1933, the temperature varied from thirty-seven to forty-one degrees C. with rigors, and did not respond to treatment with Omnadin, Detoxin, injections of the child's own blood, or Cardiazol-Chinin. An attempt was made to control the pain with Pyramidon and Pantopon. In addition, a blood transfusion of three hundred c.cm. was given.

December 22nd, 1933: The swelling on the right foot was now ready for incision and a large amount of pus was evacuated; seven days later an abscess in the left hip joint was also incised. At this time pneumonia occurred and lasted for about a fortnight.

January 10th, 1934: As the condition did not

improve, the child was treated with streptococcal serum and later was also given on three occasions an intra-muscular injection of ten c.cm. of his mother's blood. No response, however, occurred to any form of treatment, and on January 13th, 1934, another metastatic abscess was opened, in the right shoulder joint.

The next five months demanded very considerable and continuous attention to the various abscesses, but the general condition of the child gradually improved and he was able to be discharged for further observation on June 8th, 1934.

Water-Binding of the Retina. J. A. van Heuven and F. P. Fischer, University Ophthalmic Clinic, Utrecht. *The British Journal of Ophthalmology*, July, 1935.

This interesting and lengthy article is summarized by the authors as follows:

Methods are described by which the water-binding can be defined and it is explained that water-binding, the capacity, the intensity and the nature of the water-binding must be distinguished theoretically and practically. As similar researches had already been carried out on the cornea, the sclera, the uvea and the lens, a comparison between the retina and these tissues was possible.

The retina is a swelling gallert with a not unimportant capacity of water-binding. This capacity is much smaller than that of the cornea, sclera, or uvea and larger than that of the lens.

The retina swells in water.

In acids, except in phosphoric acid, the swelling of the retina is checked. This is more marked in concentrated acid, but the action of equinormal acids varies.

Alkalies promote swelling of the retina. This swelling is all the greater in proportion as the alkalies are more concentrated, equinormal alkalies again act variously in strength.

In equally dissociated acids and alkalies the swelling is variable. By salts the swelling of the retina is checked and more strongly in proportion as the salt-solutions are more concentrated.

The action of equimolar salt-solutions is variable.

By an electrolyte the swelling of the retina is influenced in the same way as by salts.

The rate of swelling of the retina is less than that of any other tissue of the globe.

The change in density in swelling makes very regular progress in the retina and it proves that the retina undergoes a very regular contraction of volume in swelling. Further this is the case only in the lens. Thus the retina undergoes a relative shrivelling in swelling, whereas the uvea, especially the choroid, undergoes a relative swelling.

In the retina all the water is loosely bound, which is not the case in any other tissue of the globe.

The exsiccation-time of the retina is longer than that of all the other tissues of the globe. Regarding the tissues of the eye the exsiccation-time increases going in a direction from the outer walls to the inner parts.

The intensity of the water-binding of the retina is great, greater than its capacity, it is smaller than the intensity of the lens, and greater than that of the other tissues.

Primary Skin Graft in Modified (Bondy) Radical Mastoidectomy. George E. Shambaugh, Jr., M.D. Chicago. *Archives of Otolaryngology*, February, 1936. For the Preservation of Hearing in Cases of Genuine Cholesteatoma.

The Bondy type of modified radical mastoidectomy as recommended by Bondy, Wittmaack, Lillie and others is not new, but the author offers in addition to this procedure a primary skin graft which he claims shortens the time of healing. He reports two cases in which this was used in which dry, completely epithelialized cavities resulted in twenty-five and thirty-two days. This is applicable to cases in which there are present genuine cholesteatoma.

He reviews Whittmaack's classification which states that true cholesteatoma is a rare tumor in the cranial bones and is probably the result of an embryonic rest. Secondary cholesteatoma results from a necrotic otitis media usually following scarlet fever or measles; it is the extension of stratified squamous epithelium from the external auditory canal through a perforation into the middle ear; the perforation is usually large and marginal. Genuine cholesteatoma is an ingrowth of epithelium from Shrapnell's membrane without a pre-existing otitis media or perforation.

The method by which this genuine cholesteatoma is produced is discussed and also the subsequent effect on the hearing. It is pointed out that it is always important to preserve hearing when possible but that when the affected ear is the only one with which the patient is able to hear then it becomes of paramount interest both to the patient and the operator that the hearing not only be preserved but improved if possible.

Shambaugh says that with an attic cannula and seventy per cent alcohol the majority of the cases of genuine cholesteatoma can be rendered dry and inactive. If this fails to produce the desired results, then he resorts to surgery. The roentgenogram shows an area of diminished density in the region of the cholesteatoma. The operation is limited to the attic, aditus and antrum, leaving the tympanic cavity, the pars tensa and the ossicles undisturbed. The object of the operation is to attain that which the irrigations did not, i. e., an opening large enough to keep the cholesteatoma sac clean, dry and inactive.

A detailed description is given of the operation. A Thiersch skin graft one-half inch in thickness is used and it is applied with Mosher's paraffin basket mold.

The primary skin graft in addition to shortening the healing period, prevents the formation of granulations which is an aid to the preservation of hearing. Drawings and audiograms accompany the article.

SURGERY AND GYNECOLOGY

Abstracts, Reviews and Comments from
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Calcified Nucleus Pulposus. Clinical, Radiographic and Radiotherapeutic Considerations (Nucleus Pulposus Calcific Considerations Cliniques, Radiographiques et Radiotherapiques). By J. E. Gendreau, Albert Jutras and O. Dufresne, University of Montreal. *L'Union Medicale du Canada*, March, 1936.

A discussion of calcification of the nucleus pulposus is prefaced by a report of a case which is

apropos, and, at the same time, quite spectacular. It follows:

A married woman, multipara, thirty-four years of age, was seen at the Radium Institute (Institut du Radium) November 26, 1935. She came because of sudden severe spontaneous pain in left lumbar region twelve days before. No history of injury, immediate or remote, but there was a history of vague distress in the lower back, accentuated by work and walking, for about two years. At the very beginning of the attack twelve days before, all movements of the body were impeded. Even movements of the head caused pain. She took to bed at once.

The spontaneous pain was limited to a circumscribed area near the dorso-lumbar region, but any interference with vertebral static would provoke an exacerbation. The erector spinae muscular masses were tense, but neither pressure nor percussion directly over the vertebral spines produced a painful response.

A radiographic examination disclosed two small opaque spots symmetrically placed in the interval between the tenth and eleventh dorsal bodies. Each little body was only a few millimeters in diameter, shaped somewhat like a lentil, and each was distinctly separated from the vertebral bodies above and below. The diagnosis was calcareous intervertebral chondritis, or calcified nucleus pulposus.

Reference is made to the very recent description of the affection, the authors stating that the oldest, as well as the first contribution was made by Calve and Galland in 1922. Six years later Schmorl made an anatomical study of the affections of the intervertebral discs.

It appears that calcification of the nucleus pulposus is very rare, only about thirty cases having been reported.

There is a short discussion of the anatomy of the intervertebral disc, emphasis being placed upon the elasticity of the nucleus pulposus, which is a vestige of the notochord; upon its central location in the disc, and especially upon its function in modifying the shocks between contiguous vertebral bodies. Calve speaks of the nucleus pulposus in this connection as an amortisseur.

No definite cause of calcification of the nucleus pulposus can be named, but it is indicated that, in general, calcium metabolism doubtless plays a role of importance. In addition, infections, dysfunction of endocrine glands, traumatism may be obscure and inconstant etiological factors.

It would appear that the majority of patients are over forty years of age but there are exceptions. It would appear, too, that the discs in the segment of the spine between the ninth dorsal and the first lumbar are the usual sites, this being the segment of transition between the normal posterior prominence of the dorsal spine and the normal lordosis of the lumbar region.

The affection is not always characterized by pain. Some of the classified cases have been discovered in a routine radiographic examination of the spine in patients without much pain. However, pain is the leading complaint in most patients.

LeRoy Long.

The Occurrence and Significance of Decidual Changes of the Endometrium in Extrauterine Pregnancy. By R. S. Siddall, Detroit. *The American Journal of Obstetrics and Gynecology*, March, 1936, Pages 420 to 426.

This is a report of twenty-four cases of ectopic pregnancy in which diagnostic curettage showed

the presence of decidua alone, and without chorionic elements, in sixteen cases.

"Decidua disappears some time subsequent to beginning ovular death, as manifested by vaginal bleeding and pain. Our series, however, and four others from the literature showed such a high incidence of decidua when abnormal bleeding had preceded by only a week, or less, that diagnostic curettage seems indicated for indefinite cases with hemorrhage of short duration. After more prolonged hemorrhage, decidua was reported infrequently in three of the series cited from the literature but was rather frequent in the fourth. It was seen in about one-half of our cases with protracted bleeding, and was actually or potentially of considerable value in differential diagnosis."

COMMENTS: The accurate diagnosis of extrauterine pregnancy is frequently so difficult that the knowledge and use of all means of differentiation is invaluable. It is recognized that diagnostic curettage is not by any means a positive criterion, but his work certainly indicates, as does one's experience, that the examination of uterine curettings may offer extremely valuable presumptive evidence if in keeping with the clinical picture.

Wendell Long.

The Effects of Radiation on the Human Offspring.

By James R. Miller, James A. Corscaden and James A. Harrar, New York. *The American Journal of Obstetrics and Gynecology*, March, 1936, Pages 518 to 522.

This article is based upon the information obtained by questionnaires sent to the members of the American Association of Obstetricians, Gynecologists and Abdominal Surgeons.

From this information they summarize: "It seems advisable to interrupt any pregnancy which has been subjected to therapeutic radiation, for it is generally admitted that serious radiation effects on the offspring will result in a high percentage of cases. These effects are proportional to the amount of radiation and are more serious in early pregnancies, though the fetus may be seriously injured in any stage of development."

They also feel it reasonable to advise that the use of radium and x-ray during pregnancy for treatment purposes be restricted to very clear and urgent indications.

The effect of radiation on offspring conceived subsequent to radiation therapy is distinctly another problem. In this group they distinguish between "early" and "late" conception. By "early" is meant conception in first few months after application of a temporary sterilizing dose. "Late" conception is that which takes place after the end of the temporary amenorrhea. It is the common view that injury is possible in the case of "early" conception whereas in "late" conception the ovum will recover completely before it is capable of being fertilized.

They urge that significant cases which show the effect of radiation on the human offspring be put upon record with sufficient data to make the report useful.

COMMENTS: With the use of radiation for the production of therapeutic abortion and for the production of temporary amenorrhea in cases of menorrhagia, this problem becomes a very vital one. The summary of information supplied in this paper is extremely valuable and it is hoped that the combined experience of all workers, none of whom have sufficient material to make unqualified conclusions, will be of assistance.

Wendell Long.

The Use of Corpus Luteum in the Treatment of Dysmenorrhea. By Ralph E. Campbell and Frederick L. Hisaw. *The American Journal of Obstetrics and Gynecology*, March, 1936, Pages 508 to 510.

This is a report of eleven patients with normal genital development and placement but dysmenorrhea, treated by a product of pure corpus luteum hormone designated as corporin by Hisaw. The rationale of the treatment of dysmenorrhea by a pure corpus luteum hormone is well known from a physiological standpoint. It has been shown in the experimental laboratories that estrogenic hormone causes the uterine irritability and painful contractions whereas the corpus luteum hormone is antagonistic to this action, becoming the quieting factor.

It is only recently that the biological researches of Hisaw and Corner have made the corpus luteum hormone available as a pure product. Most of the biological products heretofore marketed as corpus luteum have contained very little of this hormone as a pure substance.

As evidenced by this small series of cases, of which five are reported, "it is safe to conclude that corporin can be used in selected cases with excellent relief; and, corporin, like all other medical treatments, will have its absolute failures and its partial and complete successes."

COMMENTS: In the trying condition of dysmenorrhea, many remedies have been sought. Judging from the quieting effect of pure corpus luteal products upon the experimental animal uterus, much hope has been held that relief of this condition could be attained in human beings, providing a pure corpus luteal hormone product could be developed. In the past year such a hormone product has been found by Hisaw and Corner and this report, therefore, is a very interesting one.

It must be remembered, of course, in considering the subject of dysmenorrhea that associated pelvic pathology must be corrected and that the beneficial use of pure corpus luteal hormone for this condition will be limited to a selected group of patients. Wendell Long.

Effect of Progesterin and Estrogenic Substance on Human Uterine Contractions: Value of Progesterin in Treatment of Habitual and Threatened Abortion

Frederick H. Falls, Julius E. Lackner and Leon Krohn, Chicago (*Journal A. M. A.*, January 25, 1936), treated thirty-four of forty-one cases of threatened and habitual abortion successfully with the corpus luteum hormone progesterin. The authors observed that the normal response to the distended bag varied considerably in different individuals both in frequency and in intensity of the contractions. Following the administration of one cc. of solution of pituitary a marked tetany of the uterus appeared within from three to five minutes. This tetany continued for from five to ten minutes and was followed by regular rhythmic, vigorous contractions, which lasted for a variable length of time. During the time of the experiment the uterus usually failed to respond to a second dose of solution of pituitary. The effect of intramuscular injections of progesterin in one rabbit unit doses (Corner) on normal contractions and those contractions of the uterus produced by solution of pituitary was studied. Normal uterine contractions were completely inhibited in the great majority of cases. The effect began to show itself in from five to ten minutes and lasted for the entire two or three hours during which tracings were recorded. In

most instances the inhibitory effect obtained consisted of completely suspending all motility of the uterus. Solution of pituitary elicited but little or no response while the uterus was in a state of quiescence from progesterin. If progesterin was administered during a reaction produced by solution of pituitary, contractions disappeared in from ten to twenty minutes. Attempts to sensitize the uterus to solution of pituitary with estrogenic substance failed during the period in which the uterus was under the influence of progesterin. Doses of 10,000, 20,000 and 40,000 rat units of the estrogenic substance Progynon-B (Schering) were administered intramuscularly after a satisfactory control of normal contractions had been recorded. No change in normal contractions was noted after 10,000 rat units had been administered. A dose of 20,000 rat units produced a moderate increase in intensity and frequency of the uterine contractions. A dose of 40,000 rat units produced a tetany of the uterus one hour after administration, which lasted for about ten minutes. This tetany was followed by regular, frequent, vigorous contractions of the uterus for the duration of the experiment. The hypodermic injection of one-fourth grain of morphine sulfate not only failed to diminish contractions of the human puerperal uterus produced by the injection of one cc. of solution of pituitary but actually seemed to augment them.

Congenital Syphilis: Results of Treatment in Children

According to Frank R. Smith, Jr., Baltimore (*Journal A. M. A.*, August 10, 1935), early congenital syphilis is curable. The start of treatment at an early age is an important factor, as is the amount of treatment given in the first year. It is safe to say that a baby whose treatment is started under six months of age has an eighty-four per cent chance of serologic as well as clinical cure, if fifty injections of drug are given before the age of two years. The incidence of relapse increases with the age at which the treatment is started and decreases with the amount of treatment. Syphilis per se, except when the nervous system is involved, is rarely a cause of death in children over six months of age or in infants younger than six months who have had more than one course of treatment. All clinical manifestations of congenital syphilis respond to antisyphilitic treatment except neurosyphilis, in which progression may occur in spite of it and even after the serologic reactions are negative.

Facial Erysipelas: Evaluation and Comparison of Specific Antiserum and Ultraviolet Therapy

H. Jerry Lavender and Leon Goldman, Cincinnati (*Journal A. M. A.*, August 10, 1935), observed ninety cases of adult facial erysipelas from 1913 through the spring of 1935. Thirty-two of these cases were treated with specific antiserums with an average of 4.8 injections. Twenty-six patients were given intensive ultraviolet therapy with an average of 18.8 erythema doses at a treatment and an average of three treatments for each patient. Thirty-two cases were used as controls with simple wet dressings. The seasonal incidence, the lapse of time before the onset of treatment, the general condition or debilitation of the patient and the previous treatment are a few of the matters that play a marked role in the evaluation of the therapy instituted. Ultraviolet therapy is equal if not superior to serum therapy. The end results, governed by the quicker response to treatment and the fewer complications, make ultraviolet therapy for facial erysipelas distinctive and the method of choice.

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Some Important Contributions to Medical Science By Military Surgeons*

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DEAN UNIVERSITY OF OKLAHOMA MEDICAL SCHOOL

Though it is my purpose today to discuss some of the scientific achievements of military surgeons of our own army, it seems to me to be appropriate and that it will add interest to the thesis to speak briefly concerning the historical background of our medical department. It may serve to give you a better appreciation of medical men as a part of our military forces to relate some of their purely military activities.

The history of the medical department of our army is contemporaneous with the assembling of the first troops of the Continental Army at Boston in 1775. In every succeeding development of our country and in every war medical men have taken full share with the troops, either as members of the regular establishment, or of the country's militia or volunteer forces.

The first medical organizations in our army from our present day viewpoint were extremely primitive and defective. Medical officers serving with the troops were appointed by the regimental commanders without much regard to their qualifications. The Congress of Massachusetts on July 1, 1775, prescribed the first medical organization in the army and consisted of three hospitals; one at Watertown, one at Roxbury, and nearby a third hospital for smallpox. This organization consisted of two surgeons and four surgeon's mates per hospital, and one surgeon and two surgeon's mates for each regi-

ment. However, this plan only applied to troops of Massachusetts as they could not make regulations for other states. As the forces from other states came into the conflict the situation soon required a central head, and national or general legislation became necessary. As soon as Washington became Commander-in-Chief in July, 1775, he demanded action at the hands of Congress. Congress complied with his recommendations and appointed one Director General and Chief Physician, and a number of surgeons, apothecaries, surgeon's mates, nurses, laborers, etc. Dr. Benjamin Church was the first medical director. Various changes were made by subsequent acts of the Congress in 1776. In 1777 Congress decreed that there should be one Director General of the Medical Service for the whole country, but prescribed in particular that he should superintend the hospitals situated between the Hudson and Potomac Rivers; a Deputy Director General for the Northern Department, and when circumstances required it one for the Southern Department. The Medical Department was practically disbanded by 1784 except for a small body serving with troops organized to occupy the frontier posts vacated by the British troops. These troops mostly came from Connecticut, New York, New Jersey, and Pennsylvania and furnished their own surgeons and surgeon's mates.

It is worthy of note that many physicians in Revolutionary days did not serve as doctors in that war. Physicians in those

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times took a much larger part in public life than they do now. Many medical men were legislators, judges, governors, or occupied other positions of dignity and distinction. The medical man was more of a publicist and a civil leader than is now the case on the western hemisphere, except in Latin American countries. To cite a few examples of medical men who became distinguished outside of strictly professional lines in the early days of our country:

Samuel Holton, a doctor, was President of Congress in 1780.

Arthur Lee was minister to France in 1776.

John Bartlett cast the first vote for the adoption of the Declaration of Independence and was the first to sign it immediately after the President of Congress. Later he was Chief Justice and then Governor of New Hampshire as well as at one time holding the position of Colonel in the line of the United States Army.

Five of the fifty-six signers of the Declaration of Independence, and twenty-three members of the Provincial Congress of Massachusetts in 1774-75 were medical men. Many served in the line of the army.

Dr. Joseph Warren became a Major General of the Militia and was killed at Bunker Hill.

Oliver Prescott became a Major General. He was the brother of Colonel Prescott of Bunker Hill fame.

John Brooks was a Major General and Governor of Massachusetts.

John Beatty served as a Colonel and later was a member of Congress.

John Thomas became a Major General and followed Montgomery in his fateful expedition to Quebec, and died there of smallpox.

Hugh Mercer was a Brigadier General of the line and was killed at the battle of Princeton as a result of seven bayonet wounds and a blow on the head received in that conflict.

Arthur St. Clair rose to the grade of a Major General.

Edward Hand was a Brigadier General.

Henry Dearborn served as a Colonel in the Continental Army, and later became a Major General.

James McHenry who entered the Revolution as a surgeon, filled the office of Secretary of War during the presidencies of Washington and Adams. Fort McHenry was named in his honor.

Another surgeon in the Revolution was William Eustis who served in the legislature of Massachusetts, was successively a member of Congress, Secretary of War, Minister to Holland, and Governor of Massachusetts. Fort Eustis is named in his honor.

I could give many other examples. Of the 3,500 men who were practicing medicine in the United States at the time of the Revolution only 200 of them actually had medical degrees. One hundred of this latter group actually served in the Revolution.

When war with France was threatened in 1798, 10,000 men were authorized for the army and a Physician General was appointed (Dr. James Craik). In July, 1798, twelve regiments of infantry and one regiment of dragoons were added to the army. As war did not eventuate the troops were mustered out, also all of the medical department except six surgeons and twelve surgeon's mates. There was little provision made for the medical care of troops from 1800 to 1812. During the War of 1812 it became apparent that there must be a responsible head, and Dr. James Tilton was made Physician and Surgeon General in 1813, but no regular or permanent head of the Medical Department was provided until 1818. In 1818 Congress passed a bill providing for a definite medical organization and for the position of The Surgeon General. This bill in addition to The Surgeon General provided for eight surgeons with the compensation of regimental surgeons, and forty-five assistant surgeons. The budget for the whole Medical Department in 1822 was only \$34,988.

Joseph Lovell was appointed the first Surgeon General of the Army and served from 1818 until his death in 1836.

Medical officers were first given the right to wear a distinctive uniform in 1812. In 1840 a new uniform was prescribed for the army but medical officers were given only one aiguillette instead of epaulettes as other officers wore. Owing to the vigorous protests of Surgeon General Thomas Lawson this discrimination was changed

and in 1841 they were given the same uniforms as other officers.

There has been no break in the operation of the Medical Department since 1818 and its organization is substantially today what was authorized by Congress at that time.

Medical officers have participated in every war in which the United States has been engaged including the Revolutionary War, the War of 1812, Black Hawk War, Seminole War, Mexican War, Civil War, Indian Wars, Spanish-American War, Philippine Insurrection, Boxer Rebellion in China, and the World War. It should be of particular interest to us to know that during the latter struggle records indicate that three hundred forty-one physicians from Oklahoma served with the colors, and that six of them were killed in action.

I consider that one of the outstanding scientific achievements, as it related directly to the medical care of large bodies of troops, was the work of Surgeon Jonathan Letterman of the Medical Department of the Army during the Civil War. He was the first medical man to organize an effective and complete ambulance and evacuation service for *any army*. This he did when serving as Chief Surgeon of the Army of the Potomac in August, 1862. With two hundred ambulances his evacuation service was first tested in the battle of Antietam in September, 1862. Even then there were no field hospitals, a great necessity. However, he had provided for field hospitals and organized a medical supply service by October, 1862. This complete medical organization was first tested, and very successfully acquitted itself at the battle of Fredericksburg in December, 1862. Letterman's evacuation plan became the model for all other armies, and is still the basis for our modern organization.

I need not go into further details of this outstanding achievement because it probably is within the knowledge of many of you who served with the colors in the Medical Department of the Army during the World War.

Surgeon General W. A. Hammond who served as Surgeon General of the Army in the early part of the Civil War was an outstanding man whose work was never fully appreciated until too late. His amusing and

famous "calomel order" was a real advance in the treatment of the sick in those days when it was the practice of physicians to push calomel on all occasions, causing innumerable cases of profuse salivation and mercurial stomatitis and even gangrene. He had calomel, as well as tartar emetic, stricken from the regular supply table. Calomel in those days was regarded almost as a panacea. His order created a storm of protest but the order was sustained. The drug could, of course, still be obtained by special requisition, but it did away with the wholesale use of calomel and no doubt saved much suffering.

It may be of interest to state here that the first use of the Red Cross emblem on the field of battle was during the Civil War. Though the United States government did not formally adhere to the Geneva Convention until after the Civil War, its representatives had participated in the various conferences at Geneva. The Red Cross emblem was first used by the members of the United States Sanitary Commission, during our Civil War. As you all know, the Red Cross took its origin as a result of the efforts of a philanthropic Swiss patriot by name Henri Dunant who, after witnessing the sufferings of the sick and wounded following the battle of Solferino, brought about the meetings and conferences at Geneva which finally lead to the formation of the International Red Cross in 1864. A Greek cross was adopted as the emblem, the colors were made red upon a white background as a compliment to the Swiss nation which was the leader in the formation of this very valuable humane organization.

In the time allotted to me this morning I can not digress longer to cite many other incidents of interest, or many of the acts of individual medical officers that would be worth relating. I would like to be able to quote some of the reports of medical officers during the last century on the treatment of yellow fever, pneumonia, malaria, dysentery, smallpox, etc. With our modern knowledge some of them would be amusing, if not tragic. However, the professional activities of the medical officers of the army reflected the best medical thought of the country and the best medical practice in effect at the time,

as they do today. It may interest some of you to know that even in modern days some of our medical officers became prominent outside of their own line.

General Ainsworth, the founder of the Record and Pension Bureau of the War Department, became its Chief with the rank of Brigadier General. He finally was made The Military Secretary and subsequently Adjutant General of the Army with the rank of Major General.

Leonard Wood, a Captain of the Medical Corps, was made a Colonel of the first volunteer cavalry (the Rough Riders), then a general officer of the line of the army, and once occupied the high office of Chief of Staff of the army. His last public duty was as Governor General of the Philippines and he died while occupying that position in 1927.

The Signal Corps of the Army was founded by a medical officer, Albert J. Meyer, who was a captain in the Medical Corps during the Civil War and became Chief Signal Officer of the Army.

The present Meteorological Service or Weather Bureau of the Department of Agriculture is a continuation of work started by medical officers of our army early in the nineteenth century.

It should also be rememebred that the first branch of the service to have Reserve Officers was the Medical Department. The original Medical Reserve Officers were commissioned in 1908. It was not until eight years later, on June 3, 1916, that the first National Defense Act authorized a Reserve Corps for other branches of the service.

Every physician who prescribes for digestive disorders and every patient who is benefited by such a prescription owes a debt of gratitude to Surgeon William Beaumont of the United States Army, who at old Fort Mackinac on the Island of Mackinac in Michigan in 1825 began his studies of the physiology of digestion which he pursued with patience and skill for many years to the lasting benefit of mankind. His researches on the physiology of digestion covered a period of twelve years.

Harvey Cushing, in speaking of his work calls it "the most important contribution

to the physiology of digestion made during the century."

Beaumont's studies were made upon the person of a half-breed known as Alexis St. Martin. St. Martin was accidentally shot in the abdomen on the sixth of June, 1822. He was carefully treated and nursed by Beaumont for nearly two years before he recovered. His recovery left him with a gastric fistula extending through the wall of the abdomen. In other words, Beaumont was able to have direct access through this opening to the stomach of St. Martin, study the gastric secretions and view the contents of the stomach during the process of digestion. In this way he was enabled to write a careful description of the gastric mucosa during life and of the movements of the stomach during and up to the completion of digestion. He described the character and composition of gastric juice and proved that the gastric juices were only secreted when food is present. Thus he foreshadowed the work of Pavloff, and overthrew the doctrine of Magendie that gastric secretion was a continuous process. Out of his own pocket from his slender salary Beaumont largely paid the living expenses of Alexis St. Martin and his numerous family for many years in order to keep him nearby and available for his scientific observations. In 1833 Beaumont published a small book entitled "Experiments and Observations on the Gastric Juice and the Physiology of Digestion." This work was reprinted in German and in French and attracted attention all over the scientific world. It is interesting to note that the great Sir William Osler made an attempt to secure St. Martin's stomach for the Army Medical Museum when that celebrated old man and the father of twenty children died in 1880. However, Osler received a telegram on the death of St. Martin which read, "Don't come for autopsy, will be killed." It is needless to say that Dr. Osler did not proceed any further with his plans to secure St. Martin's stomach.

The William Beaumont General Hospital at El Paso, Texas, is named in memory of this distinguished physiologist.

In 1935 the State of Connecticut opened a new highway which passes through the town of Lebanon, the birthplace of Beaumont, and it has been named the Beaumont Highway.

While the epoch-making discoveries of William Beaumont on the physiology of digestion were and are now well known to all physiologists, the work of the army in connection with the discovery of yellow fever is probably better known to any group of modern physicians. The researches of Reed and his co-workers were carried out during the lifetime of many of us here this morning. From the earliest days in the history of our army yellow fever had been a menace to the troops as well as to the civilian population of the country, even as far north as the latitude of Boston. Numerous epidemics of yellow fever occurred in American seaports in the eighteenth century and the beginning of the nineteenth. A most notable epidemic of yellow fever occurred in Philadelphia in 1793 and was graphically described by Benjamin Rush, who at one time served as a Physician General in the Revolution. Even today his report is unsurpassed for realism. The part he played in that epidemic won him a place in the first rank of pioneers of preventive medicine.

From a military standpoint, yellow fever had a marked effect on the "geographic expansion of the United States." In the latter days of the eighteenth century Napoleon sent a large body of troops under his brother-in-law, General LeClerc, to Santo Domingo and Haiti. It was Napoleon's plan that after he had overrun those countries in the West Indies to send his troops on from there and occupy in force the Floridas and the territory of Louisiana on the American continent. However, as a result of yellow fever LeClerc's troops were practically decimated and became so debilitated and reduced in physical and numerical strength that his plans failed and he had to relinquish his intentions regarding the western hemisphere. Therefore, in 1803 Napoleon was very glad to sell to the United States the territory of Louisiana known to us as the famous "Louisiana Purchase" whereby our country acquired a region which now comprises fourteen states of the Union. Had Napoleon's plans been successful in Santo Domingo, France probably would have been able to take, occupy and hold the Spanish owned Floridas and continue to possess the Louisiana territory with adequate forces. We purchased Florida from Spain in 1819. Who

can say, therefore, what the effect would have been on the growth and development of our own country? Our own state of Oklahoma is situated in part of the territory thus acquired from France.

The scourge of yellow fever attacked practically every individual exposed to the disease who was not already immune. Millions of dollars were spent by governments on the American continents or accessible by sea to the Americas in endeavors to exclude the disease by expensive quarantine and other prophylactic measures. It was the practice to destroy whole cargoes when ships arrived at any seaport in an endeavor to exclude the contagion from the country. We find yellow fever first mentioned in a report of The Surgeon General of the Army in 1820. Conditions as to health were deplorable in many Army Stations, but were only a reflection of the conditions also existing in the civilian populations among whom troops were stationed. Thus, at Baton Rouge, Louisiana, during the period 1819 to 1824 twenty-six men out of every one hundred soldiers there for one year's time died. During the Mexican War yellow fever appeared in Vera Cruz shortly after the main body of troops, under General Scott, started inland. New troops which followed them as "replacements" suffered severely before they could reach the high lands in the interior away from the infected area.

The year 1867 stands out in the army as the worst year in which an epidemic of yellow fever occurred. Time will not permit me to go into more details of its extent among troops and the civilian population.

There were many theories as to the cause of yellow fever. However, the first light thrown on the method of transmitting this disease was the theory advanced by Dr. Carlos Finley of Havana in 1881, who read a paper before a medical meeting in Washington in which he asserted that in his opinion the *stegomyia* mosquito was the intermediate host or transmitter of the disease. His statements, however, were not based upon any successful experiments, but were the result of keen observation and hard-headed logic. He never proved his theory. It is worthy of note in this connection that he advanced his theo-

ry only a year after the great British physician, Sir Patrick Manson, had proven that mosquitoes conveyed the disease known as Filariasis.

In 1897 Sanarelli, the Italian, claimed that he had discovered the specific organism causing the disease. Surgeon General Sternberg delegated Walter Reed and James Carroll of the Medical Corps to investigate Sanarelli's work and they reported that the so-called "bacillus of Sanarelli" belonged to the colon group and did not cause yellow fever; that if found to be present in the bodies of cases of yellow fever it was only there as a secondary invader of little significance.

Early in 1900 General Sternberg detailed a board composed of Major Walter Reed and Assistant Surgeons Carroll, Lazear, and Agramonte of the United States Army to study the infectious diseases of Cuba with special reference to yellow fever. It will be recalled that at that time Cuba was occupied by the United States Army. There were two interesting leads to guide the commission in their work.

In 1897 Sir Ronald Ross of the Indian Army Medical Service had proven that malaria was transmitted by the bite of the *Anopheles* mosquito. Henry R. Carter of the United States Public Health Service, who studied an epidemic of yellow fever in Mississippi published a report in 1900 and showed that a period of approximately fifteen days had to elapse after the occurrence of a case of yellow fever in a house before others were affected. This again suggested an insect as the vector. Reed's board did two things. First, they proved that the disease could not be carried from a patient to a well person by fomites. A medical officer and three enlisted men for twenty nights slept in a house which was screened so that no mosquitoes had access to them, that was kept at a temperature of about ninety degrees Fahrenheit, and actually occupied beds that were made up with pillow cases, sheets, and blankets soiled by the discharges of patients ill with yellow fever. This experiment was repeated by another group of soldiers. This exploded the theory that the contagium was carried by clothing and bodily secretions and made it possible to save millions of dollars of merchandise and other goods which previous-

ly it had been customary to destroy when ships entered a port with yellow fever on board, or arrived from ports in which yellow fever was known to exist. Time will not permit going into more of the details of the experiments of Reed and his co-workers, but suffice it to say that they were successful in absolutely incriminating the mosquito as the agent. They proved that the disease was caused by what was then called the "*Culex fasciata*" later known as the "*Stegomyia fasciata*," and finally now called by its proper name "*Aedes aegypti*." Further they proved that in order to carry the infection a mosquito had to bite a patient during the first three days of illness, and that afterward a development of the "virus" had to take place in the body of the mosquito for approximately twelve days before it in turn could be capable of transmitting the disease to an uninfected or non-immune person.

Dr. Lazear died as a result of being bitten by one of these insects. Experimenting again Dr. Carroll also contracted the disease but fortunately survived. Fourteen soldiers of our army in Cuba volunteered to be bitten by mosquitoes and contracted the disease. Altogether, during these experiments twenty-eight individuals submitted either to the bite of infected mosquitoes, or to the injection into their own bodies of infected blood taken from yellow fever patients.

Today the West Indies and the North American continent, and the rest of the world except in one or two endemic areas, are free from yellow fever. However, it is now known that the great endemic focus of the disease is on the west coast of Africa. There are also one or two smaller endemic areas in South America. The disease is kept alive among human beings and monkeys and certain other animals by the bites of mosquitoes. It is believed that the original focus of the infection of yellow fever was introduced into the western hemisphere from Africa during the days of the slave trade. During recent years the Rockefeller Foundation has been accumulating evidence which indicates that a number of other mosquitoes are capable of transmitting the disease and that there is probably another animal host besides man and monkeys.

Reed's proof of the method of transmission of yellow fever enabled Gorgas of the Medical Corps of the Army, at that time Chief Health Officer of Havana, to give a practical application to these discoveries and in three months he cleared the city of Havana of yellow fever for the first time in one hundred fifty years. Later Gorgas carried on similar practical measures and by the extermination of mosquitoes, and the screening and isolation of patients succeeded in eradicating yellow fever and greatly reducing the incidence of malaria in Panama. The disastrous efforts of France under DeLessups are matters of history. It is said that every railroad tie put down for the Panama railroad by the French cost a life. Gorgas of the American Army Medical Corps made it possible for Goethals, the great army engineer, to construct the Panama Canal.

Typhoid fever for generations has been the scourge of all armies. While not as spectacular a cause of death as yellow fever, nevertheless, it has led to tremendous disability and mortality. Until 1829 it was confused with malaria and typhus fever. However, in 1829 Louis, a French surgeon, proved that typhoid fever was a separate disease though somewhat like typhus, and, therefore, adopted for it the name "typhoid." The pathology of the disease was first described by Gerhard, an American student of Louis, in 1837, and in 1851, for the first time, we find "typhoid fever" appearing as a separate cause of morbidity in the nomenclature of diseases in the records of the Medical Department of the Army.

We now know that typhoid fever existed in the Continental Army in Cambridge in 1775. The records show that one hundred forty-five men out of every one thousand soldiers were on sick report in 1775, many of whom undoubtedly suffered from typhoid. During the Civil War there were eighty thousand cases of this fever in the Northern Army alone, and thirty-seven per cent of these are reported as having died. While the incidence of typhoid fever fell rapidly in the army following the Civil War, the Spanish American War again furnished a fearful example of the ravages of that disease. Typhoid has always been present among the civil population and whenever new troops were

concentrated, coming as they did from civil life or living in communities in which typhoid fever was present, it inevitably resulted in outbreaks among the troops. In the Spanish American War, out of a force of twenty-five thousand men in the Regular Army there were four thousand, one hundred thirty cases of typhoid fever with four hundred fifty-four deaths. The volunteer troops suffered even worse. More than twenty thousand cases occurred in all the American camps out of an army of less than three hundred thousand men, including regulars and volunteers.

A board, of which Walter Reed of the Army Medical Corps was the chairman, and Victor Vaughan and Edmond C. Shakespeare, volunteer medical officers of the army were members, made an exhaustive investigation of the method of transmission of typhoid fever in 1898 and rendered a report which ever since has been regarded as a classic. This was the same Reed who later was the head of the board which studied yellow fever in Cuba. In brief, the board of medical officers proved that while infected water and infected food were great factors, the principal means of carrying the disease from one patient to another in our camps was through the agency of flies, which after having been contaminated by the excreta of patients suffering from typhoid fever, alighted on exposed food in unscreened kitchens and mess halls. In spite of measures to prevent the disease, typhoid fever continued to exist in our army and other armies and among the civilian population.

During the Boer War in South Africa the British Army had thirty-one thousand cases with five thousand eight hundred seventy-seven deaths. In 1896 Sir Almroth Wright of the British Army, after a series of brilliant experiments, succeeded in injecting killed cultures of typhoid bacilli into men without harmful results. In 1897 he published the results of anti-typhoid inoculation which he had carried out on eighteen men who had submitted themselves to him for the purpose. Wright was convinced that it was practicable to develop protection against typhoid fever in non-immunes by the injection of killed cultures of typhoid bacilli. Such cultures, while containing only dead bacilli, still had in solution the toxins or products of

their growth, which when introduced into the bodies of persons would lead to the development of the anti-bodies necessary to render them immune to the disease. In other words, that such persons would be protected to the same extent as would have been the case had they actually suffered from the disease itself. The experience of the British Army during the Boer War with typhoid fever vaccine or prophylaxis was not very encouraging, probably due to skepticism, variations in technique and poor statistical returns. This led to much difference of opinion and caused the practice to be discontinued in the British Army in 1903. The Germans used the prophylaxis in their Colonial Army in German West Africa in 1904-1907. The results with them seemed to be encouraging. However, the results were not convincing for the practice was not continued by the Germans nor taken up by any other army.

In 1908 Captain Frederick F. Russell of the Medical Corps of the United States Army (until recently Director of the International Health Board of the Rockefeller Foundation and now Professor of Preventive medicine at Harvard) was sent to Europe, and studied the methods of so-called typhoid vaccination as developed by the British and the Germans, and also among the civilian population. Upon his return Surgeon General O'Reilly brought together a board of six of the most distinguished physicians of the country with Russell and himself. These men from civil life gave up a week of their valuable time for active duty as members of the Medical Reserve Corps of the Army as a patriotic service, and at considerable personal financial loss, in order to engage in these studies. As a result of their deliberations the board reached the conclusion that vaccination with killed cultures of typhoid bacilli was both useful as a protection against the disease and harmless to the recipient, and recommended that it be introduced into our army as a voluntary measure. Russell commenced his work in the spring of 1909 using officers of the Medical Corps of the Army who volunteered to receive these anti-typhoid or prophylactic injections. It was then introduced among members of what was then called the Hospital Corps of the Army, or

enlisted men of the Medical Department, who volunteered to receive it. The results among these officers and enlisted men of the Medical Department led many officers and enlisted men of the line also to volunteer to receive the prophylactic treatment. ("Story re: Company C, Hospital Corps.)

In the spring of 1911 brigade camps were established by the army at San Diego, California, and at Galveston, Texas, and a maneuver division also took the field at San Antonio, Texas. The excellent result of typhoid prophylaxis on a voluntary basis was such that the procedure was made compulsory in the army for all members of the military service under forty-five years of age by a general order published September 11, 1911.

Typhoid fever is a disease of adolescence and rarely occurs among people who are over the age mentioned. The results since typhoid prophylaxis became compulsory in the American army have been amazing. No deaths occurred in the Regular Army from typhoid fever during the years 1913 to 1925, except as noted during the World War in 1917-1918, and yet during that period of time two hundred eighty-six thousand men entered the Regular Army as recruits. In other words they were young men of the most susceptible age. As a result of this work in the army its value was early recognized and put in practice by the civil profession, and in our country at least has largely become a routine measure during the past twenty-five years, except among the very unenlightened or fearful. Every one who has ever seen typhoid, its fatalities, or its sequelae would never hesitate to seek this beneficial treatment for themselves and their families.

During the first year of the World War the British were the only army in Europe who were partially protected and they suffered less than the troops of any other of the allied or central powers at that time. In the French army alone they had forty-five thousand cases of typhoid fever during the year 1914. The German and Austrian armies suffered very heavily with more than sixty-five thousand cases in the German and one hundred twenty-five thousand in the Austrian army. The practice of protecting men against this disease

became more common until the last year of the war all armies required prophylactic vaccination. In our own army which mobilized altogether about four and one-half million men there were only *one thousand five hundred twenty-nine* cases of typhoid fever with *two hundred twenty-seven* deaths. Had the American army suffered the same proportion of cases of typhoid fever during the World War that it did nineteen years previously during the Spanish American War we would have had six hundred twenty-three thousand six hundred seven cases with sixty-five thousand three hundred thirteen deaths. Another way to put it is to state that for every three hundred eighty-two cases we had in the Spanish American War there was only one in the World War.

At the Army Medical School laboratories constant study is going on concerning the need for changes in the dosage, preparation, and preservation of the typhoid prophylactic vaccine prepared there. While still using the original "Rawlins" strain it is quite probable that a new strain of bacilli will be developed and put in use.

In spite of the efficacy of typhoid prophylactic vaccination we are never justified in relaxing general sanitary measures or precautions for it is fully realized that typhoid prophylaxis will not always afford *complete* protection, particularly so against gigantic doses or virulent foci of infection. Nevertheless, among persons who do contract typhoid fever in spite of prophylactic vaccination, the death rate is practically *nil*. This is one of the greatest achievements in preventive medicine ever made. It stands second only to Reed's work with yellow fever during the present century. Both of these discoveries and their practical application have proved to be indeed a boon to humanity.

I regret that no more time could be devoted to each of these three outstanding accomplishments in medical science—each is fully worthy of separate consideration in longer papers. However, what I have said should serve to remind you that your brothers in the military service have performed and still perform their part in the scientific achievements of our common profession. It has been a pleasure to have had the privilege of participating in this meeting of our State Association.

Relative Importance of Specific Skin Hypersensitivity in Adult Atopic Dermatitis

Marion B. Sulzberger and Joseph Goodman, New York (Journal A. M. A., March 21, 1936), employ the term "atopic dermatitis" in place of any of the older names, such as disseminated neurodermatitis, pruritus with lichenification, prurigo diathesique, flexural eczema, and hay fever eczema. In consideration of the apparently conflicting opinions held, they review their observations in more than fifty cases of typical adult atopic dermatitis, with particular reference to the possible role of the psyche and of the nervous system, which are the two contrasting points of view. In their material they encountered no preponderance of manifest psychic or neurologic disturbances. They have found no proof that "nervousness" is a casual factor in the production of the dermatosis. They gained the impression that these occasional instances of "nervousness" were (1) purely coincidental, (2) concomitant (i. e., psychoneurologic disturbances caused by the same factor or factors producing the dermatologic manifestations) or (3) clearly the comprehensible result of the normal reaction to the dermatosis and its "maddening" itching, loss of sleep, continuous worry about the appearance, and related conditions. The family history, the personal history, the course and the results of investigations and therapy demonstrate that this dermatosis is closely associated with diseases of the atopic group. Specific skin hypersensitivity is in many cases an important factor in the production of atopic dermatitis. There is as yet no convincing evidence that atopic dermatitis can be regularly produced by deliberate exposure to suspected allergens or that the dermatosis can be regularly ameliorated by removal of allergens. While the adduced evidence strongly suggests that atopic dermatitis is due in many cases to specific skin hypersensitivity, unequivocal proof is still lacking.

Transfusion of Cadaver Blood

S. S. Yudin, Moscow, U. S. S. R. (Journal A. M. A., March 21, 1936), states that transfusion of cadaver blood was demonstrated in animal experiments and proved its therapeutic value in a considerable clinical material. Cadaver blood obtained from six to eight hours after death remains sterile and preserves its living properties. The recipient of cadaver blood is afforded ample safeguards by serologic tests of the blood, a bacteriologic checkup as to its sterility, and a careful necropsy. Because of fibrinolysis, blood of individuals dying suddenly remains fluid and can be preserved for more than three weeks. The therapeutic effect of cadaver blood does not differ from that of the blood from living donors. The technic of obtaining blood from a cadaver is simple and does not require any special apparatus. The jugular vein is severed and a glass cannula to which a rubber tube is attached is introduced into each end of the vein. The cadaver is then placed in the Trendelenburg position and the blood is allowed to run into a 500 cc. glass flask. The neck of the bottle is stoppered with cotton and the bottle is placed in a refrigerator. Organization of stations for collecting fresh cadaver blood should offer no difficulties in the larger cities, particularly in the large hospitals for emergency cases. The supply could come from traffic accidents as well as from the medical service where deaths from coronary thrombosis and angina pectoris are not rare. The author's experience with cadaver blood transfusions embraces 924 transfusions. Besides, his clinic sent out more than one hundred flasks of cadaver blood to various hospitals and clinics.

The Prevention of Complications of Diabetes Mellitus*

BERT F. KELTZ, M.D.

OKLAHOMA CITY

The treatment of the diabetic patient with insulin and the application of modern dietary principles should reasonably assure the diabetic child of growth and development instead of certain death, offer the adult diabetic an active, useful life rather than one of invalidism and attempt to keep the older diabetic on his own two feet. Accomplishment of these results is not easy. The physician has a great responsibility for the practical diabetic education of the patient and some member of his family but the patient has an even greater responsibility in his willingness to cooperate.

The discovery of insulin by Banting and Best has been the greatest single factor in the reduction of mortality from diabetes mellitus and its complications. Yet, fourteen years later, we still see patients who think that insulin is a habit-forming drug or who report to their doctor's office for each injection; others are not even advised to take insulin although they have had a persistent moderate glycosuria for years on dietary management alone. Insulin should be used in each case when the diabetes is not controlled by a diet sufficient for normal growth and activity. White feels that it should be used in the treatment of every diabetic child.¹

The paramount problem in the management of the diabetic, reasonably early diagnosed, is the prevention of complications, some of which are certain to occur if the disease is inadequately controlled. Far too numerous are the patients beyond fifty years who develop gangrene or carbuncles because a mild glycosuria, perhaps accidentally found a few years earlier, had been dismissed with a warning to "cut out sugar and starches."

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The discouragement experienced by so

many diabetics after learning that they have the disease is difficult to counteract. It often requires much extra time and patience on the part of the physician to convey to such a patient a practical knowledge of the disease itself. But this is absolutely essential in forming the foundation of diabetic education. It leads to the necessary understanding of the common complications and how they may be prevented by constant adherence to management. Without this fundamental knowledge the diabetic will be certain to disregard important points of treatment and will develop preventable complications. Not infrequently he does this even when in full possession of such knowledge. In this event the doctor is not at fault.

G. H., age six years, had been a known diabetic for ten months and was readily controlled by diet and insulin. In spite of hours of discussion with doctors and dietitian, her parents could not accept the fact that at the present time we have no cure for diabetes. They learned of a chiropractor who could "cure" the disease. After three weeks under his care and without insulin the child developed coma. After the child lapsed into unconsciousness, medical treatment was again sought. The hours of anxiety on the part of the parents until the child improved was a bitter lesson that has served to convince them of the importance of the proper treatment for diabetes.

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The diet must be adequate for the needs of the individual patient.

The parents of R. L. O., who at fifteen years of age was only fifty-nine inches tall and weighed only seventy-six pounds were worried because he was not growing. Since the development of diabetes at the age of six years, he had

*Read before the Medical Section, Annual Meeting, Oklahoma State Medical Association, Enid, April, 1936.

been poorly controlled, never remaining under the care of the same clinic or physician for more than a few months. The parents had so little insight into his management that for the twelve months preceding his first visit to the office, he had been under the care of a naturopath who had agreed to "cure" the disease in two years. Under this treatment the diet had been limited to five per cent and ten per cent vegetables with a little fruit; insulin had been reduced from sixty to fifteen units daily. Subsequently he was placed on a diet including two and one-half grams of protein per kilogram of ideal body weight which in two years has effected a gain of forty pounds and a growth of four inches.

Diabetic dwarfs or psuedodwarfs are less common now than in the pre-insulin era. Priscilla White has clearly shown that normal growth and development may be obtained by allowing adequate protein in the child's diet.¹ The necessity for altering the diet of a diabetic child at least every six months has also been pointed out.

J. K., a youth of nineteen years had been found to have diabetes eight years ago. For five years he had been on a diet of P 55, C 60, and F 145 with forty units of insulin daily. During this period he had consulted a physician only two or three times. His parents worried because he surreptitiously ate pastries and usually showed a heavy glycosuria. After learning from the patient his desire for foods higher in carbohydrate he was placed on a diet of P 70, C 170 and F 70 requiring from fifty to fifty-five units of insulin. On this diet he has felt much more energetic and has broken over less frequently.

There has been in the past few years a definite tendency to increase the carbohydrate and lower the fat in the diabetic diet. Some investigators feel that the higher fats tend to produce a hypercholesteremia contributing to the development of arteriosclerosis.² Certainly it is true that the higher carbohydrate diet more closely approaches the normal and is easier to follow. If best results are to be obtained one must, within reason, fit the diet to the

individual patient after considering his occupation, the foods obtainable and his likes and dislikes. Although it is ideal for diabetic patients to weigh their food, this is sometimes impractical and even impossible. Measured and approximated diets may contribute largely to successful management whereas insistence upon a weighed diet may mean failure.

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Some person is at fault each time a known diabetic dies of uncomplicated diabetic coma. The patient and some responsible member of his family must be made familiar with the symptoms of early acidosis.

J. McA. developed diabetes in 1930 at the age of twenty-two years. During hospitalization he had received instructions to be followed at home. His wife who clerked in a department store was not given special instructions and knew little other than that her husband's food should be weighed. After an interval of two years, having consulted his physician one time, the patient felt that special care was no longer necessary. For several weeks he did not follow any dietary regime and took insulin only "now and then." After several days of malaise and indisposition, he developed nausea and vomiting followed in a few hours by unconsciousness. Upon examination two hours later, the air hunger type of respiration suggested the possibility of diabetic coma. After direct questioning, the wife gave the information that her husband was a diabetic but neither of them had any suspicion that the disease might be related to his present illness. Forty units of insulin were given immediately and the patient moved to a hospital where he made an uneventful recovery with adequate treatment for coma.

Deaths from diabetic coma have shown a striking decrease since the widespread use of insulin but the incidence of coma is still disgracefully high. There is almost no excuse for its development in a known diabetic since it is precipitated by too much food, too little insulin or the development of an infection. Appreciation of the fact that infections increase the insulin requirement and the early recogni-

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tion of the symptoms and signs of acidosis usually prevent the development of coma. Each hour that elapses after the onset of coma increases the rate of mortality. It is not fully appreciated, even by the medical profession, that the treatment of acidosis is as much of an emergency as the treatment of acute appendicitis.

* * *

The diabetic should understand the beneficial effects of exercise and the possible hypoglycemic effect of over exercise.

E. E., a young man who had been a diabetic for three years became careless. He was taking thirty units of insulin morning and night. One afternoon he played thirty-six holes of golf. Upon returning home, he took his regular evening dose of insulin and ate his usual meal. At eleven o'clock after having retired, he felt so restless that he arose and paced the floor. An hour later his wife awakened to find him in a severe convulsion and unconscious. In the receiving room of St. Anthony Hospital he responded immediately to the injection of glucose intravenously. Now he eats an extra orange or apple before playing golf.

Joslin has well emphasized the importance of the "three steeds—Diet, Insulin and Exercise"—especially in the growing diabetic.³ He advises almost any form of physical activity except horseback riding and swimming. An unusual amount of exercise, too much insulin or too little food may precipitate hypoglycemia. With a knowledge of the early symptoms, their cause and treatment, the patient can usually prevent a severe reaction. If he is not aware of these facts, his experience may contribute to an unfortunate fear of the use of insulin.

* * *

It is important that a diabetic frequently examine his urine for sugar, but he must not make constant diurnal variations of the diet and insulin dosage as a result of this test without the advice of his physician.

J. B., age twenty-eight, notoriously difficult to keep on constant management, neglected to take his insulin until after a late lunch. Because his urine specimen

at that time showed a yellowish brown precipitate he took twenty-four units of insulin instead of the usual fifteen. Two hours later while walking down town, he began to feel weak and stopped in a drug store for some ice cream. Upon continuing his walk the weakness returned and the last thing he remembered was trying to reach the next drug store for orange juice. He became unconscious, fell to the sidewalk and received a laceration of the scalp.

Wide fluctuations of the blood sugar level in the severe diabetic are difficult to control even with the best of cooperation on the part of the patient. A night dose of insulin is often used in an attempt to lower the fasting hyperglycemia. The recent development by Hagedorn and his co-workers⁴ of the slower and longer acting Protamine Insulin has, after clinical experience with it led Joslin to make the statement that we are on the threshold of a new era in the treatment of diabetes mellitus.^{5 6} At the present time the preparation is being used only in clinical trial.

* * *

Every diabetic, especially one in middle life, should be carefully instructed as to the measures which may prevent gangrene.

When W. F. S., a farmer, developed diabetes thirteen years ago at the age of fifty-six, he had been placed on a weighed diet and five units of insulin before each meal. For sometime he partially followed the treatment outlined but in the past four years, the diet had been incorrectly approximated and insulin discontinued. Medical advice had not been sought for six years. One week before admission to St. Anthony Hospital he developed a blister on the right great toe which in two or three days became infected. Careful history revealed that for the past two years the sensation in his feet had become diminished and they were cold. During winter nights he had placed a hot water bottle or hot iron to his feet but did not recall having burned them. Examination revealed a fair pulsation of either dorsalis pedis artery. Fortunately the infection readily cleared up under conservative diabetic treatment.

This patient is, however, a candidate for the too common present day complication of diabetes, namely gangrene. Dillon feels that the uncontrolled mild diabetic of middle life who has a slight glycosuria over a period of years is especially prone to develop gangrene. In the majority of cases it may be prevented by adequate treatment of the disease together with very careful observance of the classical instructions laid down by Joslin for the care of the feet.³ These prophylactic measures deal with cleanliness, aids in the treatment of imperfect circulation of the feet and the avoidance of conditions which might encourage infection by an abrasion of the skin.

* * *

In middle age, diabetes mellitus must be considered in the presence of any infection about the feet.

Mrs. C. C., aged fifty-seven, developed an infection of the left small toe subsequent to trimming a corn. During two weeks under medical treatment, the toe became gangrenous. She developed unconsciousness and five hours later a urine specimen, examined for the first time during her illness, revealed heavy glucose and acetone. Ten hours after the onset of unconsciousness she was admitted to St. Anthony Hospital in a state of extreme shock with a blood pressure of seventy mm. of mercury systolic and thirty mm. of mercury diastolic. She expired in a few hours in spite of treatment with insulin, fluids and blood transfusion.

Any infection developing in a diabetic demands immediate and constant attention from the standpoint of the diabetic management, as well as the treatment of the infection. Lea A. Riely cared for a diabetic with Malta fever whose insulin requirement was raised from thirty to one hundred fifty units daily during the febrile period of the disease.⁷

SUMMARY

Some of the common complications of diabetes mellitus are acidosis and coma, hypoglycemia, infections and gangrene. Their prevention, with the patient under medical supervision, depends upon the cooperation of the patient but only after

he has received a thorough and practical diabetic education.

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Multiple Myelomas With Tumor-like Amyloidosis: Clinical and Pathologic Study

A. H. Rosenblum and J. D. Kirshbaum, Chicago (Journal A. M. A., March 21, 1936), report the twelfth case illustrating the formation of amyloid tumors in association with multiple myelomas. A study of the literature indicates that the bone marrow is a frequent site of amyloidosis in cases of multiple myelomas. When present, the amyloid presents itself as isolated infiltrations in the wall of the vessels, as massive accumulations in the form of tumors, and as isolated deposits within the pre-existing myelomas. That the bone marrow may be diffusely infiltrated with amyloid unassociated with a pre-existing blastoma has been shown in the cases of Gerber and others. Clinically the authors' case presented practically all the features typical of multiple myelomas, modified to some degree by the presence of the complicating amyloidosis. Vague aches and pains in the joints, spine and chest could be attributed to amyloid infiltrations of the joints and joint spaces, as described by Magnus-Levy. However, these symptoms are often present in the absence of amyloidosis and without roentgen evidence of joint involvement. Symptoms of renal insufficiency, low blood pressure and large amounts of protein in the urine are of common occurrence in both multiple myelomas and amyloid nephrosis. Roentgen evidence, as in this case, is usually most marked in the skull with numerous typical, punched out areas of osteolysis. In other bones there may be a resemblance to a metastatic neoplasm. In most cases there is an increase in the blood proteins, identified by Magnus-Levy as euglobulin, which may rise to eight per cent. The renal manifestations of the present case can be attributed, at least in part, to an amyloid nephrosis with a fall in the blood proteins to about half of the normal, due to the large amount of protein lost with the urine. The typical Bence-Jones protein could not be identified. Instead, an atypical proteose was present constantly in the urine in large quantities. It was very similar to the proteose described in the case of Rosenheim and Wright, and its formation is probably due to the same derangement of protein metabolism that produces the Bence-Jones protein. The congo red test furnished clinically a very valuable aid to the diagnosis of a diffuse amyloidosis, most of the dye having been removed from the blood stream in a short time. Death occurred from renal insufficiency. Interpretation of the roentgen appearance of the bones may become difficult when the myeloma is heavily infiltrated with amyloid, as demonstrated in the roentgenogram of the ribs, and may even take on the appearance of a metastatic osteolytic neoplasm. Biopsies should always be done in such questionable cases to facilitate an accurate diagnosis.

Recent Advances in Deep X-Ray Therapy*

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Since 1931, the use of deep x-ray in cancer therapy has been drastically changed. This is true in the majority, if not all, cases of malignancy. Because of this fact, it is very important that such information should be more quickly brought to the attention of all physicians and not just to those who specialize in therapeutic radiology. The proper handling of, and information given to patients by their family physicians and surgeons where radiotherapy is necessary, is still largely being based on technique given prior to 1931. In the hope that this paper may serve in broadcasting, to a certain extent, present day conceptions of deep x-ray technique, this essay is being presented.

The use of deep x-ray therapy in the treatment of various pathologic processes is relatively new. X-ray was first used in 1896 as a therapeutic agent and since that time tremendous strides have been made in the refinement of x-ray equipment. Moreover, the physics of dosage has been exhaustively studied, affording meticulous precision in intensity and a thorough understanding of the amount of radiation delivered to the surface or to any given depth.

Standardization in dosage also has been enhanced by the development of instruments for measuring x-ray intensity. These dosimeters are constantly being refined to make for greater accuracy. Such an instrument is calibrated on the basis of r units, and this unit has been internationally agreed upon, which enables radiologists the world over to approximate more closely a uniformity of treatment. A brief word of explanation may be apropos: the r unit used in describing dosage intensity cannot be employed alone, as filters and the physical factors employed in the production of x-rays greatly modify the value of the r unit.

Aside from the physical equipment, many other advances have been achieved. The pathologist has been of extreme value in delving into new methods of grading tumors, as done by Broders. Hence, a better estimate of results to be obtained through radiation is possible as this grading measures, at least to a degree, the radio-sensitivity of the involved tissue. Most experienced radiotherapists now agree that so-called radio-resistant grade I and II growths often respond as well as the grade III and IV growths. The grading, however, is still helpful in indicating the greater or lesser degree of potential metastasis and thereby is of prognostic value. In certain instances, deep x-ray is used as a diagnostic aid. This applies e. g. in certain cases of cervical adenopathy where biopsy is undesirable.

During the years deep x-ray has been in use, the majority of this work has been done using 170 to 200 k.v. Two hundred k.v. is still the accepted standard; however, higher or supervoltage machines have been in use for six to seven years. These are designed to approximate more closely gamma or the more penetrating rays of radium. Such x-ray machines range at various voltage capacities, as 400, 500, 600, 750, 800 and 1000 k.v. The general trend of the literature has been quite encouraging in reference to this supervoltage equipment, but much remains to be learned of its ultimate value. It must be admitted that the greatest difficulty is the large expense of such a machine. Moreover, the housing of this machinery requires an extra large space and usually in a building by itself, or least a wing on a building. The personnel to maintain and run such machinery adds to the cost, making it necessary for such equipment to be owned by a well financed or richly endowed institution. Handicapped by this qualification only a few machines in large and greatly scattered cities could be

*Read before the Section on Dermatology and Radiology, Annual Meeting, Oklahoma State Medical Association, Enid, April, 1936.

placed, thus depriving thousands of people the opportunity of being treated.

In addition to the distinct improvement obtained in measuring x-ray dosage and more modern machinery, there is another decided advance. This in reality is the keynote of this paper. This advance is the radical change in dosage, and this change must be stressed. In short, dosage has been tremendously increased. The dosage is ten to twenty times the former amount. Such a measure entails considerable difficulty for both patient and physician, but improved results justify such a change. It would be much easier to continue the old technique and it is a lamentable fact that some physicians have not kept abreast of the times and are still administering obsolete dosage. It is readily understood how such negligence can be overlooked by those who do not closely follow this special line of work, as will be now explained. Unfortunately, a large majority of cancer cases are brought to the radiotherapist in an advanced stage and most of them have a fatal termination. Because of this fact, physicians and surgeons generally have come to look on deep x-ray largely as a matter of palliation and seldom, if ever, a curative agent. Therefore, if the case that is referred to the radiotherapist proceeds to die, it is in direct agreement with what was anticipated. Now, on the contrary, by a refinement in dosage and technique, as is now being carried out by most radiotherapists, a definite increase in the percentage of cures can and is being obtained. This principle of radiation technique was established by Henri Coutard of the Radium Institute of Paris.¹ After reviewing his work and statistics, one can see the injustice of employing obsolete treatment. It is true that there will still be a discouraging number who fail to be cured; however, the decidedly greater number of cured patients makes the increased dosage technique a matter that cannot be denied.

To be more explicit as to the increased dosage, it may be said that Coutard first conceived this idea and put it in practice from 1920 to 1926 and reported a series of five-year cures in 1931 while on a visit to this country. He reported his work again at Zurich on his cases from 1926 to 1933. His work was based on malignancies found

in the tonsillar region, pharynx, hypopharynx and larynx. The principle of his treatment was developed on the work of Regaud, another Frenchman, who previously found that the application of radium in daily fractional doses could be administered over a much longer period of time, with a much larger total dosage, and with a definite increase in cancericidal effect without the damage to surrounding normal tissue that had been produced in cases in which the radium was given by one or several massive applications. In plainer terms, this means that patients have to be treated daily for three to five weeks. On his recent visit to this continent and particularly in a speech before the Oklahoma City Clinical Society, Coutard stated that he was more and more favoring the extension of the treatment period to a time covering forty to sixty days. To be sure, such a long period of treatment is very difficult from an economic standpoint for the patient, and also it is hard to make him cooperate. In the treatment of malignancies in areas above mentioned, the patient suffers temporary symptoms in the throat that are quite disturbing and symptoms of the skin that are undesirable in the form of a pronounced radiodermatitis. By extending the treatment period time, these symptoms are less pronounced and less liable to produce permanent sequelae.

The principles of Coutard, *i. e.*, a protracted treatment period, thick filtration of x-rays and large total doses given through multiple portals can and are being used in the treatment of cancer in all localities, instead of just those in the nose, throat and larynx. An understanding of x-ray reactions on the skin is not generally known by most physicians. Skin reactions can vary so much in their significance that much confusion exists. For example, a pronounced dermatitis of the skin produced by thinly filtered x-rays with the total dose being given in a short period of time causes damage to the skin that may be permanent. In contrast, thickly or well filtered x-rays given over a long period of time (that is, in weeks) produces a definite dermatitis that is temporary and will heal. Such reactions as mentioned under the latter circumstances should not be misinterpreted and cause physicians un-

wittingly to make derogatory remarks any more than the scar of an incision from an operation should frighten them.

Since the American College of Surgeons has approved pre-operative radiation in many malignancies, more and more surgeons are becoming interested in treating their cases pre-operatively by deep x-rays. In this connection, more education is necessary to acquaint surgeons with the optimum time following radiotherapy before operation. In most instances a period of one to two months is necessary after the completion of x-rays. This month's variation depends somewhat on the total dose given. In the event it has been very intensive the longer period is necessary in order for the skin reaction to subside and be in good condition for the operation. Not only is there an effect on the cancer cell *per se*, but there is also a definite change in the tumor bed; *i. e.*, the vascular elements and connective tissue supporting the malignant growths. Such a change cannot be thoroughly attained in a period less than about four weeks or more. A knowledge of the effects of radiation on the tissues in question will dispel any fears that might arise in the period between radiation and operation. With such a knowledge being thoroughly understood by all surgeons it will be a much easier task for the radiotherapists to administer the necessary amount of deep x-ray treatment properly instead of a small amount practically of no value as has been the custom in the past.

Another question worthy of discussion is the attitude that physicians take towards their fellow practitioners' work. For example, many adverse criticisms have been offered to the radiologist by the surgeon. Undoubtedly, both groups have made many mistakes and will continue to do so. It is rather easy to see the reason for finding such criticism if one realizes that the surgeon sees the radiologist's failures. However, the radiologist sees the surgeon's failures and could easily form similar opinions, stating unwittingly that surgery in cancer treatment is a failure.

Each physician should take a more philosophical viewpoint and realize that both methods are inadequate, leaving much room for improvement which may be attained by constant research and

study. To be sure, unwarranted mistakes, grossly poor judgement and definitely improper technique are inexcusable; however, none of us is so perfect in our work and medicine is such an inexact science that it behooves us to be more kindly and tolerant in our expressions. Such an attitude will work towards a kindlier feeling, greater cooperation and better results in curing the ailments of mankind which is, after all, the result that we as physicians hold paramount.

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Acute, Fatal Coronary Insufficiency

Robert L. Levy and Howard G. Bruenn, New York (*Journal A. M. A.*, March 28, 1936), assert that there is a group of patients with atherosclerosis of the coronary arteries to whom death comes suddenly and in whose coronary vessels, at necropsy, no fresh thrombus is found. The syndrome may be designated "acute, fatal coronary insufficiency." The clinical and pathologic features of twenty-four cases falling into this category have been studied. Records of three hundred fifty-two other cases of coronary sclerosis, with and without thrombosis, have been similarly studied and used as a background for comparison. In approximately twelve per cent of the fatal cases of coronary sclerosis without thrombosis, death occurred suddenly. If thrombosis had occurred, death was sudden in thirty-three per cent. The presence of thrombosis thus almost tripled the likelihood of sudden death. But thrombosis of a coronary artery was rarely if ever the immediate cause of death in these patients. It increased the liability to acute coronary insufficiency by further reducing the functional capacity of an already impaired coronary system. Non-fatal attacks of various sorts in patients with coronary sclerosis may be regarded clinically as intermediate between the ordinary bout of angina pain or its equivalent and a fatal seizure. It is probable that many of these attacks are due to minor degrees of acute coronary insufficiency without occlusion.

Hematuria as a Complication of Pregnancy

Harold L. Morris, Detroit (*Journal A. M. A.*, August 10, 1935), found that in a routine study of one hundred fifty-four urologic consultations because of urinary tract disturbance during pregnancy, hematuria occurred in thirty cases. Further study of these thirty patients revealed cystitis in all cases; pyelitis in twenty-two, of which twenty were bilateral and two were unilateral; hydronephrosis in ten, two of which were bilateral and eight unilateral; pyonephrosis of the right kidney in two cases, and ptosis in nine cases, four being bilateral, four right and one left. Megaloureter occurred in eleven cases, of which four were bilateral, six right and one left. Ureteral calculus of the right ureter was present in two cases, and ureteritis in two cases, one bilateral and one of the right ureter. Hematuria is a grave complication of pregnancy, and in all instances of hematuria occurring during pregnancy the very least the patient is entitled to is a thorough investigation by a competent urologist.

EPIGASTRIC HERNIA*

H. LEE FARRIS, M.D., F.A.C.S.

TULSA

An epigastric hernia is usually referred to as occurring in the epigastric region, most generally in the linea alba, between the umbilicus and the ensiform cartilage—or within the space bounded by the xipoid cartilage, the ribs margins and the umbilicus. It is usually caused by the escape of extra peritoneal fat through the interlacing fibers forming the linea alba; “thus dragging behind it a funnel shaped portion of the peritoneum.” By intra-abdominal pressure this process may become enlarged to admit considerable omentum—the bowel, or rarely, the stomach—while the greater percentage is usually so small, in size, as to be overlooked or indifferently treated.

HISTORY

In the latter part of the twelfth century, this condition was first described by *Arnold de Villeneuve*. In 1743 *Garengat* thought this to be the cause of obscure abdominal symptoms. About one year later *Gunz* believed the stomach to be included in the sac of such, and spoke of it as a “gastric hernia” (or gastrocele). *A. G. Richter* (1785) was not impressed with the idea that the stomach was ever involved in the hernia, and reported a number of such cases. It remained for *Maunoir* to perform the first successful operation for relief of this type of case in 1802. However, in 1886 *Terrier's* report of operation was condemned because of danger of peritonitis, which was frequent in previous procedures. Later with the advent of Listerism this prejudice was overcome.

Denk, in 1910, found the omentum with the transverse colon, the stomach wall and appendices epiploicae in one case; adherent omentum in seven; free omentum in five; empty hernial sac in eleven; preperitoneal lipoma and hernial sac in nine; preperitoneal lipoma without sac in six; *Mas-singer* reported “two cases of simple stran-

gulation; in one case the small intestine was found; in the other, the wall of the stomach.” *Gottschlich* had a case in which the stomach was adherent, at one point, to sac of hernia (not strangulated). *Lipkin* reported “strangulated inguinal hernia containing the stomach.” *Guttieriz* reported a rupture of the left rectus and consequent hernia containing the stomach.

SYMPTOMS

Blunner states: “The patient is often unaware of the presence of a hernia until it is accidentally discovered, and many years may elapse before symptoms are manifested.” However, it is safe to say that different individuals will present entirely different symptoms, in no way commensurable to size of the hernia, as has been previously mentioned. The severity of the symptoms may be increased by exertion, over-eating and so forth, which may give rise to nausea, vomiting, pain in the epigastrium or abdomen. Usually pressure over the suspected area gives tenderness and pain, regardless of the size of the hernia. In small ones, the condition is best observed when the patient is standing; as the contents may slip into the abdomen when the patient is recumbent.

ETIOLOGY

Epigastric hernia may be congenital—due to faulty union of fascia, or acquired—due to trauma, heavy strain, pregnancies, rapid emaciation after obesity, violent exercise and so forth.

FREQUENCY

De Costa states: “Hernia in linea alba includes about one per cent of all cases of hernia”—and occurs in men about four or five times more frequently than in women; also more frequent in those who are engaged in hard manual labor, and between the ages of twenty-two and sixty-two (although they sometimes occur in small children, because the linea alba is quite thin and abnormally wide). This condition frequently causes epigastric or ab-

*Read before the Surgical Section, Annual Meeting, Oklahoma State Medical Association, Oklahoma City, May, 1935.

dominal pain, nausea and vomiting after eating a heavy meal, or any unusual effort; but it is seldom ever strangulated. Another interesting feature is that it often occurs with other forms of hernia, femoral, inguinal or umbilical, in the same person.

PATHOLOGY

By fusion of the recti muscle sheaths of the two side the aponeurosis thus formed is called the linea alba; and it is wider above the umbilicus than below. It is perforated by several blood vessels above which forms a weak spot, so that any increased intra-abdominal pressure may enlarge one of these openings to allow passage of any abdominal structures—for instance, extra peritoneal fat, omentum intestine, but seldom the stomach.

TREATMENT

Radical cure, or operative procedure, is by far the most satisfactory—unless definitely contra-indicated by some serious systemic condition. The mechanical treatment, by truss or belt, is usually very unsatisfactory in hernia of the linea alba, because of the pain and discomfort engendered.

In a careful search of all available literature only four strangulated stomachs are reported.

Only two strangulated stomachs through the epigastrium: Massinger's and mine.

Lipkin reports a case of a left inguinal hernia containing the stomach.

Leischner reports one esophageal hernia containing the stomach.

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A CASE

Tessie Howard, negro woman, twenty-eight years of age, married, weight one hundred eighty-five pounds.

Admitted April 19, 1932, at 6:15 p. m.

Dismissed May 5, 1932.

Family History: Negative except father and grandfather had had hernia.

Past History: Childhood diseases, menstruation at fourteen; married, had two children, normal labors. History otherwise negative.

Present Complaints: Began in 1924 as a protrusion (about two inches below the ensiform cartilage). This gradually grew larger, though always reducible, but very painful at times. She also had an umbilical hernia, rather small and present since the children were born; never gave pain or trouble. There is also present a left inguinal hernia which was first noticed about 1929; gradually grew larger but always reducible (is now about the size of a hen egg and very annoying).

Physical Examination: Confirmed above statements. Radical cure was recommended and accepted.

Patient was given saline laxative on evening prior to the operation, was nauseated and vomited some; complained of considerable tenderness in the epigastric region, however no one suspected a strangulation in either hernia until revealed by the operation the next day.

Final Note: Patient was dismissed May 5, 1932 after having made an uneventful recovery from beginning to end. All wounds healed by first intention except small liquefying clot in the fat of the inguinal hernia, that drained only four or five days. Three years later the patient is reported to have no return of either hernia.

OPERATING ROOM REPORT

Temperature 98.4; pulse 80; respiration 20; general condition good; morphine, grains one-fourth had been given forty-five minutes before the patient arrived in surgery. Pre-operative diagnosis—epigastric, umbilical and left inguinal hernae.

Anaesthesia: Lumbar two hundred m.g. of novocain given.

Findings: Incision into the sac of the epigastric was made and considerable sero-sanguinous fluid escaped. A knuckle (about the size of fist) of the greater curvature of the stomach was found in the sac and strangulated. Strangulation was relieved, strangulated part was

watched for a few minutes to see if the circulation would recover, then the fascia was plicated with No. 2 twenty-day chromic catgut. The umbilical hernia was repaired through the same opening and in the same manner, using No. 3 twenty-day catgut for the fascia. The skin was closed with dermal, three silk worm stay sutures in-situ. Left inguinal: the usual incision was made, the sac isolated, legated and removed, the stump transplanted upward and inward with a closure of muscles and fascia in the usual manner except No. 3 twenty-day catgut was used instead of

No. 2; dermal for the skin closure. Minimum amount of shock and hemorrhage was noted.

LABORATORY REPORT

Urinanalysis: Amber, slightly acid, chemical analysis negative; microscopic analysis, many squamous cells, few pus cells, small amount of mucus.

Wasserman: Negative.

HEMOGRAM

T.W.C.	B.	E.	MY.	J.	ST.	S.	L.	MO.
7,800	0	1	0	0	3	60	31	5

CONVERGENCE INSUFFICIENCY*

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Let us start with considering the frequency of insufficiency of convergence. We find it very rarely under fifteen years of age. Between the ages of fifteen and thirty-five constitute approximately sixty per cent of our cases; from thirty-six to fifty about thirty per cent; beyond fifty, ten per cent; but rarely after sixty. The sex is equally divided. Occupations are not limited; however, it is found mostly in students, clerks, bookkeepers, idle housewives; in other words, eye users who take little physical exercise. Other contributing factors are over-indulgence in alcohol, tobacco, chronic conjunctivitis, endocrine diseases, protracted illnesses, skull injuries, seborrhic blepharo-conjunctivitis and other allied conditions. Sinus infections and faulty illumination are factors.

The anatomical factors that are to be evaluated and are very important are:

1. Mal position of cranial bones and shape of the orbit, i. e., orbits too far apart or not correct in length.
2. Abnormal size of the muscles.
3. Muscles with long and short tendons and anomalies of insertions.
4. Refractive errors.

Another important phase is the physiology of action of the muscles:

1. Abnormal development of the third congrate innervation that is in this condition, poor innervation resulting in reduced muscle tone. The type of innervation is of prime importance as an etiological factor.
2. Hypo-activity of ciliary muscle.
3. Defective fusion. This condition if it exists must be determined at the start as to whether stereoscopic exercises must be given or prisms be used at the out-start of exercises.

The measurements of the convergence powers is next in line and may be briefly considered thus:

1. Measurement of meter angle of convergence is not necessary. When obtained should be at the working distance.
2. Punctum proximum is important.
3. Diplopia with red glass, Maddox rod.
4. The most important is the prism adduction power, and the amount of prism that can be sustained. Also the time of fatigue at from four to eight inches.

It is acknowledged that there are a

*Read before the Eye, Ear, Nose and Throat Section, Annual Meeting Oklahoma State Medical Association, Oklahoma City, May, 1935.

great many more factors to be considered such as cyclophoria, sensitivity of the different portions of the retina, etc.

The differential diagnosis should not be difficult when a careful history is taken and the adductions and muscle balance is obtained.

SYMPTOMS

The patient usually complains of eyes burning, stinging, and smarting on close work. If the patient does not have the above complaint, it is blurring, great fatigue, or, "I can only do close work for thirty minutes to an hour." Next, there is doubling of print on close work, and lastly headache which is most uncommon, and usually a refractive error is associated with the insufficiency. Vertigo is unusual. The patient rarely complains of any trouble at distance. It has been our experience that when adduction exercise corrects the muscular tone of the internus, the small refractive correction is done away with for most of the close work. Persons who complain of a great deal of afternoon fatigue often have a convergence insufficiency. We took fifty consecutive basals on people who had adductions less than nine degrees and exophoria for near of eight degrees or more, and found forty-two of the fifty to have basals of from minus five to minus thirty. However, B. M. R. is only a laboratory test, and I far prefer the afternoon temperature as compared with the morning taken over a period of a week. The types of employment, endocrine, make up (the latter is very important), and medical history must be dwelt on carefully before the correct complaint of discomfort can be correctly evaluated.

TREATMENT

The treatment of convergence insufficiency: As all such conditions are divided into three classes, medical, orthopic, and surgical. The least resorted to will be considered first and dismissed, that is surgical. The choice of operation is advancement of the internus; in other words, strengthen the weak muscle. Tenotomy of the externus is absolutely worthless; recession is of some value, but much less effective than going after the weak muscle. Medical treatment, in many cases, is absolutely indispensable, as correcting

hygienic conditions, habits of life, proper exercises, etc. One of the frequent problems is hypo-thyroidism of mild degree. We often have the patient take the temperature at nine, twelve, three, four, five, six, seven, eight, nine, where a history of fatigue in the afternoon is given or exhaustion on exercise is noted. Thyroid extraction is given from one to four grains per day.

Orthopic or prism training may be divided into three classes; first, prisms incorporated in the glass, base in, which is rather an inexcusable procedure if your study of the patient is complete; it rarely is resorted to. Secondly, if you have a lazy patient you can give a prism in a pair of grab fronts, base out, to put over his spectacles to provide stimulation when he won't take the necessary exercise.

There is a company that produces stereoscopic cards for convergence insufficiency. These are prescribed as base out sets. This set of cards, in our experience, has been of value only in people who have defective fusion. Before exercise prisms are prescribed, the ophthalmologist can take a set of cards such as the Sattler cards, a stereoscope, and get a very efficient kinetic stimulation, also awaking poorly developed fusion. The most efficient method of stimulating the internus is by prisms base out exercise. First, the muscle balance must be obtained, by a perfect maddox rod, at twenty feet and fourteen inches. The aperture of the light must be controlled, near being a pin point, and twenty feet being a one c.m. aperture. Next the adduction power must be obtained by the prisms stimulating contraction of the internus, advancing as far as possible. Where the power of adduction is obtained, at say eighteen degrees, give the patient a fifteen-degree prism and tell him to do the base out exercise fifty times, using a candle at twenty feet, noting the activity of fatigue. Previous to that, have the patient look at a pencil point at eight inches for one minute, to produce fatigue or the symptoms they primarily complained of. Assume patient can only fuse a ten-degree prism, I tell them to take a candle at twenty feet, increasing the prism until they can fuse one twenty degrees, one on each eye. They are then instructed to start doubling twenty degrees and ten

degrees on one eye and twenty degrees on the other, then a twenty-degree and ten-degree on each eye, so on, to a twenty-degree and fifteen degree, and lastly a ten-degree, fifteen-degree, and a twenty-degree, using a rubber band to hold the prisms together. After the patient can fuse two forty-five-degree prisms he is given a card to use for close exercise, from four to twenty inches, in conjunction with the distance. When patients have too little adduction to start at twenty feet we usually start them on the near exercise.

The average patient takes about thirty days, coming in for instruction and observation about every six or seven days. If the muscles haven't the reserve kinetic energy it takes sixty days, and occasionally the patient has to use prisms every day, just as he washes his teeth every morning, incorporating them as part of his daily habits.

Where the interni have their power, and there is a refractive error under a diopter one, as a rule, can do seventy-five per cent of his work without glasses, and many who have over one diopter of hypermetropia, can not only be relieved of their asthenopia of the aforesaid symptoms, but can go several hours a day without their lenses. When the correction of the convergence is made, and the proper instructions are given as to medical care and exercise, with adequate cooperation from the patient, the results are, as a rule, quite gratifying.

Intraspinal (Subarachnoid) Injection of Alcohol for Pain Associated With Malignant Conditions of the Female Genitalia

J. P. Greenhill and Herbert E. Schmitz, Chicago (Journal A. M. A., August 10, 1935), experimented with twenty-seven subarachnoid injections of alcohol in twenty-five women with advanced carcinoma of the genitalia. The authors recommend this procedure in all women who suffer from excruciating and persistent pain that is associated with genital carcinoma. This injection is simple to carry out, it entails very few risks, and it has brought relief to twenty-four out of twenty-five patients. Because it is simpler than any operative procedure and because the results are so satisfactory it is now being used in preference to pelvic sympathectomy, which was advocated two years ago for the same purpose. The authors will resort to sympathectomy in the cases in which alcohol injections fail. Until more is known about the late effects of ninety-five per cent alcohol on the spinal cord itself, it is best to restrict subarachnoid injections to patients in whom the malignant condition is far advanced.

Prevention of Hypochromic Anemia in Pregnancy

John C. Corrigan and Maurice B. Strauss, Boston (Journal A. M. A., March 28, 1936), observed two hundred normal pregnant women who presented themselves for routine care in the antepartum clinic when they were from three to seven months pregnant. Each patient was assigned a number in order. Blood for examination was withdrawn without stasis from an antecubital vein, and a careful history was taken. Every woman was given a bottle containing one hundred coated tablets, with instructions to take one tablet after each meal and to return the bottle and unused tablets at the next visit to the clinic. At all subsequent visits a fresh bottle or one hundred tablets was given the patient. Unknown to her, the number of tablets remaining unused at each visit was counted and from these data the actual amount of medication taken was calculated. Patients who had been assigned odd numbers received tablets containing 0.2 Gm. (three grains) of ferrous sulfate; patients with even numbers received tablets that were identical in appearance and size but contained lactose and no ferrous sulfate. Women who took less than one of the prescribed three tablets daily were excluded from the two series, as were also those in whom sepsis or hemorrhage developed, whether during gestation, parturition or the puerperium. The average daily intake of iron of the treated group was 0.5 Gm. (7½ grains) of ferrous sulfate. At each visit and again one week after parturition, venous blood was withdrawn for examination. Hemoglobin determinations were performed at monthly intervals and one week after delivery by the Sahli method, with tubes so calibrated that one hundred per cent was considered the equivalent of 15.6 Gm. of hemoglobin per hundred cubic centimeters of blood. Red blood cell counts were performed with pipets and counting chambers certified by the U. S. Bureau of Standards. Of the one hundred women given no iron, twenty-four had less than seventy per cent hemoglobin post partum. Of the one hundred women given iron, none had less than seventy per cent hemoglobin post partum. The conclusion is drawn that hypochromic anemia in pregnancy may be largely prevented by the routine administration of iron, especially in the latter months of gestation.

Are There Cyclic Changes in the Human Vaginal Mucosa?

Bernard Zondek and M. Friedmann, Jerusalem, Palestine (Journal A. M. A., March 28, 1936), could not find cyclic changes in the human vaginal mucosa analogous to those of the uterine mucosa. The vaginal mucosa shows different microscopic pictures in different places. In deficient ovarian function (primary amenorrhea) a picture of a mucosa similar to one with good ovarian function is found with even the same changes as in the premenstrual phase. In the absence of ovarian function, by means of ovarian hormones (estrogenic substance, progestin) the authors could produce enlargement of the uterus, a proliferative and a premenstrual uterine mucosa and menstruation, but they could not find analogous changes in the vaginal mucosa. In human beings the infantile vagina may be influenced by estrogenic substance, but it is not certain whether it is because of a specific hormone effect on the vaginal mucosa or on the mucous membranes in general. Since the vagina is developed embryologically different in different species, the different reaction of the vaginal mucosa is explainable.

An Improved Anesthetic Technique For General Surgery

Abstract of an article by Drs. W. A. Fraser and J. T. Gwathney, Surgery, Gynecology and Obstetrics, 62:236-237, February 1, 1933:

In this study, various combinations of analgesic and anesthetic drugs were used with a view of attempting to improve on the present surgical technique, first, by abolishing psychic influence before operation; second, by securing a better brain block and greater relaxation during operation; and third, by diminishing gas and wound pain after operation. The procedure as evolved was carried on more or less completely in over 300 patients.

The final technique is to give a dose of a barbiturate about two hours before the operation, then one hour before the operation inject intramuscularly 1/48 grain of Dilaudid in two cc. of a twenty-five per cent solution of magnesium sulphate, repeating in fifteen minutes. After the second dose the patient is turned on the left side and a retention enema of ether 2½ ounces, olive oil 1½ ounces, and chlorbutanol 10 grains is given. Up until this time no expert attention is necessary and this quiet sleep is converted into surgical anesthesia and relaxation. With an open mask, nitrous oxide (or ethylene) and oxygen being used—fifteen per cent to fifty percent to which a five per cent vapor of ether may be added, if necessary.

The physiological balance between respiration and circulation is retained, with respiratory and circulatory rate normal. The patient is in good condition at all times and relaxation is only second to that obtained by spinal and, in some cases, was equally as good. The long, quiet sleep after the operation is restful and life-saving, enabling the tissues to resume their normal relationship without painful reaction. With this method and technique, the convalescence of the patient starts on the operating table and this is as it should be.

The synergism of magnesium sulphate with Dilaudid is even more striking than with morphine. The dosage of Dilaudid was decreased and its effect was prolonged and in a vast majority of cases patients awoke without pain, nausea or vomiting. Ether vomiting is a thing of the past.

In conclusion, the authors state:

"1. A definite prolongation of the effect of Dilaudid is made by the addition of a twenty-five per cent solution of magnesium sulphate.

"2. The small amount of ether counteracts the depressing effect of Dilaudid magnesium solution on the respiratory center.

"3. A comfortable relaxation with less shock and greater post-operative comfort occurs with this technique than with any procedure heretofore used."

Complete information on Dilaudid can be obtained from the Bilhuber-Knoll Corp., Jersey City, New Jersey.

Addison's Disease Following Adrenal Denervation in a Case of Diabetes Mellitus

J. M. Rogoff, Chicago (Journal A. M. A., January 25, 1936), cites a case in which an attempt had been made to benefit a diabetic patient by denervating the adrenals. Addison's disease developed. The history indicates that this syndrome was superimposed on preexisting diabetes by surgical intervention with the adrenals. The surgical manipulations apparently resulted in occlusion of blood vessels and degeneration of the adrenal cortex. Of course the coexistence of diabetes may be assumed to have been unfavorable for possible regeneration of the damaged adrenal cortex. The

patient was in a subacute condition of adrenal cortical insufficiency when seen May 12. At that time it appeared that he would survive probably not more than about six months. He died October 18. This prognosis was based on the existing evidence of advanced adrenal cortical insufficiency, indicating extensive and progressive degeneration of the glands. The development of ebony colored small spots in a patient with Addison's disease is associated with irreparable damage to the cortex of the adrenals. The gravity of the condition was indicated further by the repeated exacerbations and by evidence of progressive adrenal degeneration as interpreted from the costolumbar pressure reaction. The presence of this sign in Addison's disease may be interpreted as evidence of active inflammatory or degenerative processes in the gland. The case illustrates the serious danger of attempting adrenal surgery for the correction of various ailments supposedly related with disturbed adrenal function. Such supposed relations are entirely hypothetical and are not supported by tenable evidence. At any rate, the surgical procedures that have been employed should not be expected to be of permanent benefit, since denervation of the gland by section of its nerves is usually followed by regeneration of the nerve supply within a few weeks. Excision of one gland, as has sometimes been attempted, is subject to the same criticism, and is to be deprecated. The very fact that it is alleged to be of benefit in so great a variety of diseases ought to render the practice suspect.

Dinitrophenol Poisoning With Thrombocytopenia, Granulopenia, Anemia and Purpura Complicated by Lung Abscess

Stanley W. Imerman and Carlyle P. Imerman, Hollywood, Calif. (Journal A. M. A., March 28, 1936), present two additional cases because of several unusual features that were observed for the first time following dinitrophenol; namely, anemia, thrombocytopenia, purpura and lung abscess. Cases of diffuse bone marrow depression following the use of dinitrophenol have not been reported, despite the close relationship of this drug to benzene. Their case one illustrates the diffuse nature of the bone marrow depression as evidenced by anemia, thrombocytopenia, leukopenia and granulopenia. Their case two reveals the selective damage to the bone marrow as shown by the normal hemoglobin and red blood cell count, thrombocytopenia, leukopenia and granulopenia. The average red blood cell lives in the peripheral circulation from fourteen to thirty days or more; the length of life of the mature neutrophil that reaches the blood stream is from one to six days. It is obvious then that one should take complete blood and platelet counts for at least two to four weeks on all patients in whom a general bone marrow depression may be suspected, and in some cases, as shown by case one, blood counts should be taken for several months, as there may be some permanent damage to the erythroblastic tissues of the bone marrow. It might be advisable therefore to institute iron therapy as a prophylactic measure in these cases, before the onset of the anemia. The relationship between lung abscess in case one and dinitrophenol cannot be established from one case but should be borne in mind as a possible untoward effect of this drug. There is no known specific chemical antidote for dinitrophenol. In view of the rapidly increasing number of untoward effects of this drug, as well as the convincing comprehensive report of the Council on Pharmacy and Chemistry for not accepting this drug in New and Nonofficial Remedies, physicians should make every effort to discourage its use.

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McAlester, Oklahoma

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EDITORIAL

ANNOUNCEMENT OF THE LEGISLATIVE COMMITTEE

At the meeting of the House of Delegates in Enid, April 7, it was unanimously and enthusiastically voted to double the dues of the members of the State Association for the next year. But owing to the fact that this money would not be available until January of next year, it was likewise unanimously and just as enthusiastically voted that each county be requested to contribute a sum equivalent to ten dollars per capita for its members in the association.

They realize that it might be a hardship on some men to pay ten dollars, but at the same time realize that there would be

one or more men in each county who could pay more than the ten dollars, and thereby raise the required fund.

This fund is to be for the maintenance of an all time office in Oklahoma City, manned by an efficient executive secretary and a competent stenographer, to help us by organization to bring about many things that are sorely needed by the public as well as the profession.

We, your committee on legislation, sincerely hope that when this call is made upon the various societies for funds, that they will graciously and promptly respond.

This fund will be kept separately in the hands of the State Secretary, Dr. L. S. Willour. And will be spent by and with the counsel of your entire legislative committee (which is composed of Dr. George R. Osborn, President; Dr. Sam McKeel, President-Elect; Dr. McLain Rogers, Member; Dr. C. B. Barker, Member; and Dr. H. K. Speed, Chairman), for the good of the profession all over the state and the good of the general public in an unselfish and proper manner.

PHYSICIANS SHOULD PLAN BOTH WORK AND RECREATION

To take advantage of every opportunity for improvement professionally is very necessary for any physician who hopes to make a success of the practice of medicine. Who does not agree? This is not all. A sound body with some energy reserve is equally important. I am writing this as a result of my observation of doctors with whom I have been associated, who had irregular habits as to eating and sleeping, who took little or no recreation and rarely took a vacation. This is not right as they cannot enjoy participation in the normal family activities and seriously upsets the routine so necessary to normal living.

No physician needs to be so busy that he cannot develop a program of living whereby he can have meals at regular hours and sufficient sleep to conserve his strength for his daily task. Emergencies alone will make exceptions to this program necessary. Poor planning and wasted time are the cause of most irregularities in the physician's life and as a result of

this very thing he is an old man before his day.

My appeal is for regularity of habits, time to be taken for recreation, an annual vacation, some fellowship with other people, a little bit of life as he travels on his way, some time for his family and some time for his church and civic activities.

All these things with the proper amount of study and work will make, I believe, not only a better doctor but a better citizen.

PROMOTING THE CAUSE OF THE MEDICAL PROFESSION EACH MEMBER'S OBLIGATION

"The most encouraging aspect of national affairs in the last few weeks, to be sure, has been the awakening currents of public opinion that have pressed themselves upon Congress and produced some modification of clumsily worded, radical and well-nigh confiscatory legislation."

This significant statement in David Lawrence's column in the *United Daily News* may well be taken as a text for a reiteration of appeals to the members of the medical profession to use their individual influence to spread the physician's viewpoint on social and economic questions.

Lay reformers are working diligently, at a most propitious time, to arouse public support for their pet schemes for socializing the medical profession and other groups.

The American Medical Association and the various state associations are using every means at their command to enlighten and protect the public and the profession.

Their most powerful weapon is the influence of the physician in the community which he has continued to serve through every period of economic distress. For that sacrificial devotion to his calling, his standing is generally respected and his judgment accepted with confidence.

With the community looking to him for advice and leadership in matters affecting medical practice and public health, the physician very properly, and as the opportunity is presented, can counteract the effect of propaganda which is threatening

the very existence of the practice of medicine as a profession.

Here is an opportunity for *preventive medicine*.

Whole-hearted participation in the activities of medical organizations must be supplemented by militant effort on the part of the individual physicians, in order to prevent the eventual capitulation of the private practitioner.—*Ohio State Medical Journal* (December 1, 1935).

Editorial Notes—Personal and General

DR. R. B. FORD, Holdenville, has returned from Vienna and Berlin where he has been taking post graduate courses for the past two months.

DR. J. H. PLUNKETT, Wagoner, is taking post graduate work in Nashville, Tennessee.

DR. R. M. SHEPARD, Tulsa, President of the Oklahoma Tubercular and Health Association, attended the National Tubercular Association, at New Orleans, in April.

DR. L. J. MOORMAN, Oklahoma City, appeared on the program of the National Tubercular Association which met in New Orleans in April.

DR. and MRS. WILL C. WAIT, Clinton, left April 28th for a two weeks vacation in Kentucky and Kansas City, where it was their privilege to witness that great American classic of the turf, the Kentucky Derby. They also attended a meeting of the American Medical Association and the Federation of Sanatoria both of which were held in Kansas City. Dr. and Mrs. Wait also visited the Waverly Hills Sanatorium and by combining pleasure with the many professional aspects of the trip, enjoyed a timely vacation.

Goiter Meeting in Chicago in June

The American Association for the Study of Goiter will meet in Chicago, June 8-9-10. The tentative program is very interesting and we will recommend to those interested in goiter that they attend this meeting where they will receive a program well worth while.

Golf and Infant Feeding

It is possible to play over the entire course with a single club and bring in a fair score. But playing with only one club is a handicap. The best scores are made when the player carefully studies each shot, determining in advance how he is going to make it, and selecting from his bag the particular club best adapted to execute that shot.

For many years, Mead Johnson & Company have offered "matched clubs," so to speak, best adapted to meet the individual requirements of the individual baby. We believe this to be a more intelligent approach than the use of a single "baby food" to meet the many situations presented by many babies. "There is no average baby."

RESOLUTIONS

DEAN COPPER WIDENER

Dr. Dean Copper Widener died in Okmulgee City Hospital March 23rd, 1936, after a short illness. He was born at Lathrop, Mo., February 19th, 1896, and came to Okmulgee with his parents when a small boy. He received his preliminary education in the city schools of Okmulgee, and at Swarthmore College. After serving as Lieutenant during the World War, he attended Johns Hopkins University, and received his degree as Doctor of Medicine there in 1925, specializing in pediatrics. After serving one year as interne at Harriet Lane Hospital, New Haven, Conn., and another at Johns Hopkins, he returned to Okmulgee and engaged in the practice of his profession until his death. Interment was in the Okmulgee cemetery. Dr. Widener is survived by his wife, Esther Kinsey Widener.

Dr. Widener was unexcelled as a pediatrician, and won marked recognition in that field.

Your committee, having been closely associated with him in his profession, especially feels his loss, and submits the following resolution to be placed in the records of the Okmulgee County Medical Society; a copy sent to his wife; and one to the Oklahoma State Medical Journal for publication:

"WHEREAS, by the passing of Doctor Dean Copper Widener, the entire medical profession, the community at large, and especially the mothers and children have suffered a great loss, and ther has been left vacant a place that cannot be filled, not only in the profession, but in the hearts of all who knew him,

THEREFORE, BE IT RESOLVED, that, realizing the full measure of the loss occasioned by the death of Dean Copper Widener, who ministered kindly, gently, and faithfully to the needs of the children, and devoted his time and skill to their care and development, this Society extend our sincere sympathy to his wife, and adopt this resolution as an expression of our and our deep regret at his death."

appreciation of him as a physician and friend,

M. D. Carnell,
E. D. Rodda,
Harvey O. Randel,
Committee.

DOCTOR WILLIE MCCLURE LESLIE

WHEREAS, on March 25, 1936, our friend and co-worker departed this life by reason of a streptococcal infection of the throat and septicemia contracted in the pursuit of his life's work, namely, the amelioration of suffering and death;

AND WHEREAS, we the members of the Kay County Medical Society, knowing his unflinching application to the task to which he set his hand after graduation from Baylor University in 1916;

AND WHEREAS we being constantly associated with him and being fully aware of his constancy of purpose in his life's work, the relief of suffering, unmindful of his own well being or financial gain:

BE IT RESOLVED, that this Society hold of record this expression of deepest sympathy to those from whom he so untimely departed, and a deep feeling of regret in his unfinished work—the relief of the ill, the council of the bereaved and the unflinching sympathy of a truly benevolent heart;

BE IT THEREFORE RESOLVED, that a copy of

this sentiment be sent his family and be set forth in the minutes of our Society, and a copy be sent The Journal of the State Medical Association.

A. S. NUCKOLS, President,
Kay County Medical Society.

Designed Solely for Infant Feeding

S. M. A. is an adaptation to breast milk, designed solely for infant feeding, instead of for use in coffee and in miscellaneous other ways.

The similarity of S. M. A. to human breast milk makes it easy to start the infant on supplementary feedings of S. M. A., gradually shifting over to complete feeding of S. M. A.

The physician finds S. M. A. simple to prescribe and the mother gratefully finds it simple to prepare. The antirachitic factor is included and there is no extra vitamin D to buy. The liberal provision of vitamin A activity is constant and uniform in S. M. A. throughout all seasons of the year, whereas this factor is variable in cows' milk.

Treatment of Early Syphilis

Oliver S. Ormsby, Chicago (Journal A. M. A., April 11, 1936), states that with modern methods of treatment, early syphilis can be eradicated in the majority of cases. Continuous treatment with no rest periods gives the best results. Alternate courses of arsphenamine and bismuth are recommended covering a period of at least eighteen months and employing a minimum of twenty injections of old orphenomine or its equivalent with other arsphenamines. The Wassermann reaction is usually reversed by the end of the first period and should remain so permanently. The early reversal of this reaction indicates proper progress of treatment, but by no means does it relieve the physician of carrying out the outlined schedule. An adequate amount of arsphenamine is absolutely essential and nothing save intolerance should reduce this. A standardized method of treatment for large numbers of patients is justifiable for the reason that this early group includes chiefly young, otherwise healthy patients who tolerate much treatment with safety, and also because it is at this time that such treatment offers the best chance for eradication of the disease. With the efficient drugs available, treatment should be instituted at the earliest possible moment; i. e., when a diagnosis has been made either by the demonstration of *Spirochaeta pallida* or by a positive Wassermann reaction or definite clinical evidence. If started early before the natural defense mechanism has had time to function, the necessity of continuous vigorous treatment is imperative. By any of the modern schemes of treatment the Wassermann reaction becomes negative and all signs of the disease have disappeared by the end of the first course. If at this time a lapse of treatment occurs, either voluntarily or through some neglect by the patient himself, disastrous developments may occur such as neurorecurrences or other relapses, so that it is of the utmost importance that no interruption in the treatment be allowed under any circumstances. If the Wassermann reaction remains positive after the first period in spite of continuous treatment or if a Wassermann relapse occurs, examination of the spinal fluid is indicated.

ABSTRACTS : REVIEWS : COMMENTS and CORRESPONDENCE

INTERNAL MEDICINE

Edited by C. E. Bradley, M.D., Medical Arts Building,
Tulsa; Hugh Jeter, M.D., 1200 North Walker,
Oklahoma City

By HUGH JETER, M.D.

Diseases of Metabolism and Nutrition. Review of Certain Recent Contributions. Russel M. Wilder, Ph.D., M.D. Dwight M. Wilbur, M.D. 1. Diseases of Metabolism, Dr. Wilder.

This is a review of recent investigations pertaining to metabolism and nutrition.

DIABETES MELLITUS

Hagedorn, in Copenhagen, Denmark, has prepared a compound of protamine from salmon sperm and insulin which by virtue of a slow liberation of insulin gives a prolongation of the insulin effect. This avoids fluctuation of blood sugar values and according to Dr. Elliott P. Joslin in the new edition of "The Treatment of Diabetes Mellitus," a great achievement has been made.

This fifth edition by Joslin is reported to be a classic heretofore unequalled. A few other high lights in this text are:

"In the year 1934 with 1,396,903 total deaths were 28,000 deaths with (not of) diabetes, a rate per 100,000 population of 22.1 per cent, a ratio of diabetic total deaths of 2.0."

"Diabetes is now the tenth disease and has advanced to this place from the twenty-seventh place in 1900."

"One Jew in nine Jews between the ages of fifty-five and sixty-four years died with diabetes in New York City."

"The average age in the Naunyn era, ending about thirty years ago and the Banting era, including the past thirty years, has risen from 44.5 to 62.8 years."

Exercise is increasingly helpful but one must have insulin and then exercise."

"At the New England Deaconess Hospital since 1919, eighteen per cent of the one hundred ninety-six diabetic autopsies performed had purulent infection of the urinary tract."

"Eight hundred thirty-nine diabetic children of whom seven hundred sixty-nine developed after August 7, 1922 and seventy had been seen earlier than that date, showed eighty-nine per cent survival."

He does not believe there are any cures among children.

SUGGESTIONS ON THERAPY

Antidiabetic extracts of the mucosa of duodenum have been thoroughly studied. Many investigators have "fallen into this trap." They forget that it is characteristic of diabetes to show a remission during the first year or two under any kind of management and that the value of a new form of

treatment must be proven with cases of long duration. This criticism is not to be discrediting. The results with patients are encouraging and the observations in the laboratories are full of promise. A serious difficulty has been encountered in the preparation of the extracts. Some have been active and others inactive.

VITAMINES

The study of vitamins has become very prominent in connection with the treatment of diabetes but a review of his work which is apparently quite exhaustive, fails to reveal any convincing evidence of the value of such therapy.

IRRADIATION OF THE PITUITARY GLAND

This has been tried by Soskin, Mirsky, Zimmerman and Crohn but without encouraging results.

EFFECTS OF SALTS OF SODIUM AND POTASSIUM IN CARBOHYDRATE METABOLISM

Schenck, Glass, Beilless, McQuarrie, Thompson, Anderson and McLean studied diabetic treatment by the injection of sodium chloride intravenously. Most of these reports indicate that there is some value in the administration of sodium chloride both by mouth and intravenously and the author of this article states that he has repeatedly seen a favorable and lasting effect on patients who are insensitive to insulin because of infections or other complications.

High values for potassium are found in blood serum in untreated cases of diabetes mellitus and study seems to indicate that potassium salts are contra-indicated.

DIABETIC DIETS

Considerable work is reviewed in connection with the high-carbohydrate low-fat tendency in diabetic diets and considerable controversy continues to exist in connection with actual organic changes in diabetic patients treated on low-carbohydrate diets versus those treated on high-fat diets.

Duff of Johns Hopkins claims after considerable study with animals that the production of arteriosclerosis by feeding a high-fat diet is not identical anatomically with that of arteriosclerosis in man. The lesion in the rabbit involves the media primarily and the intima is affected by the disease in man.

He contends that finally those pathological conditions in man which are associated with cholesteraemia with the one exception, diabetes, are infrequently associated with arteriosclerosis. Duff refers to pregnancy, hypothyroidism obstructive jaundice, certain types of nephritis and lipid nephrosis. These negative observations in patients with outspoken hypercholesteremia constitute the strongest sort of evidence against the idea that hypercholesteremia acting alone can cause arteriosclerosis.

In this connection Lieb reports extensive clinical and laboratory studies on Vilhjalmur Stephansson, the arctic explorer, whose diet consisted ex-

clusively of meat. Examinations revealed no significant abnormalities.

In the Medizinische Klinik, Falta of Vienna reported an interesting questionnaire on diabetes. Questions were sent to clinicians and their replies in answer to pertinent questions regarding the management of diabetes mellitus vary widely.

The theory of diabetes is summarized and a report of some interesting work by eminent physiologists and investigators is mentioned.

A report of EYE COMPLICATIONS is made. THE TREATMENT OF THINNESS WITH INSULIN

Many reports are reviewed but there is some disagreement as to results.

The psychic element is found by many to be a factor. Administration of insulin was used by others who advocate this treatment even tho there may be a psychic element. Large doses up to sixty-four units daily are used.

DIABETES INSIPIDUS

The injection of a solution of posterior pituitary has been proven to control the symptoms of diabetes insipidus. The disadvantage, however, of provoking such effects as pallor, headache, palpitation and diarrhea are objectionable. Blumgart has suggested spraying the substance into the nose or applying it on cotton pledgets but unfortunately this is not always efficacious and is expensive.

The administration of dry powdered substance of the posterior lobe is efficacious, more convenient and much less expensive. This has been shown by a number of investigators. Each dose is weighed and dispensed by the pharmacist in the form of a "powder paper." Four doses a day are required. The patient unfolds the paper, rolls it up like a straw, inserts one end in the nostril and sniffs the powder.

Other interesting data are given concerning the pathogenesis of this disease.

NUTRITION

Dr. Wilbur has given an excellent review of recent work pertaining to vitamins. He also discusses dental caries.

EYE, EAR, NOSE AND THROAT

Edited by Marvin D. Henley, M.D.
911 Medical Arts Building, Tulsa

Familial Macular Degeneration. Lieut.-Col. R. E. Wright, C.I.E., I.M., Superintendent, Government Ophthalmic Hospital, Madras. The British Journal of Ophthalmology, March, 1935.

Wright reports that macular degenerations have been met with from time to time during the past fifteen years in Madras in their routine fundus examination but due to the difficulty in obtaining accurate family histories, striking sibships were rarely forthcoming. However, in September, 1933, he was asked to examine the three sons of a station-master because of the fact that their vision was fast failing. There was one other child, a girl, who apparently had normal vision. The father was of mixed Indian and Portugese descent. His sons were aged fourteen, twelve and eleven years. All had defective visual acuity, a dull mentality and remarkable heads. The father said that neither he or his wife had anything wrong with their eyesight, nor had there been any consanguineous marriages or defective vision in earlier life, for at least two generations. His wife was of similar descent.

These children, formerly in one hospital, had received antispecific treatment. At other places they had been examined, they were considered non-syphilitic. Their blood had formerly been examined at reliable laboratories and the Wasserman reported negative. Night blindness was not present but the father had noted dullness and mental apathy, particularly in the oldest boy. The fundus changes which Wright had many times noted before he encountered this family did not resemble any known pathological state and he regarded them as cases of familial degenerations. The macular fundus changes has been described by such expressions as "beaten brass or silver," "coppery sheen," etc. Pictures are reproduced, front and lateral views of the heads of the three boys. The daughter, father and mother have a lateral view. Roentgenograms of the skulls of all the family are reproduced. The findings of a detailed examination in each eye of the three boys is given in the article. Blood examination of the three boys and the father showed a negative Wasserman.

A part of the closing paragraph of Wright's article is: "The chief features of interest in this group of retinal defectives were: the reported escape of the girl (as yet, however, only seven years of age), and the associated progressive mental deterioration and dolichocephaly. In August, 1934, I had another opportunity of examining the whole family. As the father said on the occasion of the previous visit, the girl (now aged eight years) had nothing wrong with the vision, nor had the mother. The eye grounds of father, mother and the girl were within normal limits. The girl, however, showed a concentric depression of the fields, the outline lying between the ten degrees and the twenty degrees circles with a three mm. white object at two metres. (The mother's fields were much fuller, extending beyond the twenty degree circle with a two mm. white object at two metres.) They showed two peaks at axes forty-five and one hundred thirty-five in the inferior quadrant, the peak in the left inferior temporal quadrant being symmetrical with that in the right inferior temporal quadrant and reaching to the forty degree circle in the form of a blunt cone. The inferior nasal peaks were similar, but only reached the thirty-five degree circle. The girl did not appear to have a narrow, elongated skull and the father seemed to be a square-headed individual, but the head of the mother was obviously of the long, narrow type. The actual conditions are shown in the reduced x-ray positives and in the anthropometric figures. The girl's measurements are not very different from those of the youngest boy. The girl is to report next year for further examination."

Allergic Rhinitis. L. W. Dean, M.D., J. J. Bronfenbrenner, Ph.D., Dr.P.H., H. L. Alexander, M.D., F. K. Hansel, M.D., A. W. Proetz, M.D., A. M. Alden, M.D., W. F. Wenner, M.D., H. M. Smit, M.D., C. C. Bunch, Ph.D., B. J. McMahon, M.D., J. H. Alexander, A.B., A. D. Linton, B.S. Annals of Otology, Rhinology and Laryngology, March, 1936.

This is a symposium on allergic rhinitis which took place before the Midwestern Section of the American Laryngological, Rhinological and Otolological Society, Inc., in St. Louis, January 15, 1936. Each of the above mentioned are considered an authority in the particular line of work that they are doing. J. J. Bronfenbrenner presented a paper entitled "Allergy from the Immunologist's Point of View;" Dr. Alexander, "Skin Tests in Allergy;" Dr. Hansel, "Surgical Treatment of the Nose in Allergy;" Dr. Proetz, "Treatment of the Acute Attack

of Allergic Rhinitis;" Dr. Alden, "Iontophoresis in Allergic Rhinitis;" Dr. Wenner, "Studies on Zinc Iontophoresis;" Dr. Smit, "Tissue Changes in Iontophoresis;" Dr. Bunch, "The Principles of the Electric Current in Iontophoresis;" Dr. McMahon, "Late Changes in the Mucosa of the Frontal Sinuses and Nose of Dogs Following Ionization;" J. H. Alexander, "Passive Transfer Relation of the Reagin Content of the Blood to Iontophoresis;" and Mr. Linton about "Intramucosal Tests Before and After Iontophoresis." The article is about sixty-eight pages in length. Numerous microphotographs and tables accompany the article. The publication appears to be a sincere attempt on the part of a group of recognized, competent men to evaluate the facts in regard to this controversial subject. The Panel Discussion was under the direction of the Chairman, Dr. L. W. Dean who is also editor of the journal from which this article is taken. His summary of closing remarks on the entire symposium are given below

By Dr. L. W. Dean: The original work that has been reported by the members of the department of ear, nose and throat in this discussion represents about fifty per cent of the research work on allergic rhinitis in the Department of Otolaryngology. The results of the remaining investigations will soon be reported.

This discussion has emphasized certain clinical phases of allergic rhinitis. The diagnosis of the nasal condition is an essential thing. Miss Zelma Alvis, working in our service, has shown that individuals having no symptoms of allergy do give positive skin tests. Many have an increased number of eosinophiles in the nasal discharge. Sometimes there is an increase in the eosinophiles of the blood. These observations will soon be reported, together with the explanation of the findings. If one of these persons had suffered from chronic intumescent rhinitis with acute exacerbations, it is easy to conceive that an erroneous diagnosis of allergic rhinitis would be made. Again, individuals with known allergic conditions, as gastro-intestinal allergy, may have at times a chronic intumescent rhinitis with an acute exacerbation and the rhinitis is not necessarily allergic.

A person may suffer from ragweed hay fever. If examined during the winter we may find skin and mucosal sensitivity to the ragweed pollen, reagins in the blood stream and eosinophiles in the nasal discharge. If he has a blocked nose due to a chronic intumescent rhinitis, the latter is not necessarily allergic. It may have been caused by repeated attacks of seasonal allergic rhinitis. Nasal treatment of this condition during the winter will give a nice result until the ragweed pollen is again in the air. The nonallergic cases of chronic intumescent rhinitis do yield nicely to nasal treatment.

An understanding of a case of allergic rhinitis can only be secured after ten days of study. Skin tests should be made. Intramucosal tests are necessary in order to determine the sensitivity of the mucous membrane of the nose. Passive transfer should be done if mucosal tests are positive. In addition to this there should be a careful study made of the nose and nasal sinuses.

Dietary irregularities should be sought for. If dietary deficiencies are found the patient should be put on an optimum, well balanced diet. If because of food sensitivity essential foods are withheld, they should be replaced by things of equal value. Endocrine defects must not be overlooked. A careful bacteriologic examination is necessary. It is assumed that the examination will be preceded by a meticulous history.

The more complete an understanding we have of our patient the fewer the number of cases of severe allergic rhinitis which will be cured by nasal treatment.

As brought out in this discussion, if a person is an outstanding allergic individual, as evidenced by the presence of PLUS FOUR reagins in the blood stream, there will be no improvement or very little improvement from any type of nasal treatment. The only benefit to be secured is that there may be a slight decrease in the obstruction accompanying the acute allergic reaction.

It has been evidenced in this discussion that treatment of allergic rhinitis is the avoidance of allergens, desensitization and nasal treatment. In addition to these things, the diet should be properly supervised, proper hygienic measures instituted and endocrine dyscrasias, if present, treated.

It is difficult to understand how one could apply a nasal treatment in an individual that has a normal nasal mucosa preceding the attack of acute allergic rhinitis. The moment, however, that we have a pathologic nose the problem becomes a different one.

Adenoids, deflected septa, exostoses, chronic purulent sinusitis, if present, should be given attention. The most important nasal condition from the clinical standpoint is a chronic intumescent rhinitis. When present the nose becomes easily blocked, either by a mild allergic rhinitis, a common cold, exposure to drafts or even by sleeping in a recumbent position. The patient often states that the side of his nose on which he lies is blocked. Chronic intumescent rhinitis is caused by acute attacks of allergic rhinitis, by repeated attacks of common cold, by irritating gases, dusts, etc.

It is this condition which is so beneficially affected by iontophoresis. Iontophoresis will shrink the moist, boggy mucosa of the nose and leave a membrane which is thinner and dryer. If a patient with chronic intumescent rhinitis has one side of the nose treated by iontophoresis and several weeks later develops a common cold the treated side remains dry; the mucous membrane is pale; there is no nasal obstruction. The untreated side is blocked, reddened and has the usual abundant watery discharge. Iontophoresis will produce a thinning and dryness of the normal mucosa. It benefits the patient by interfering with the swelling of the membrane during an attack of allergic rhinitis, common cold, when lying down, sitting in a draft, etc.

The influence of iontophoresis on the tissues of the nose, including the end organs of the parasympathetic system, have been described. It is most unlikely that iontophoresis has any effect on the allergic reactions of the tissues themselves. Because of the changes in the tissues some of the disturbing features of acute allergic rhinitis are lost. The ability of the nasal mucosa to absorb inhaled pollens seems to be disturbed. At any rate, contact application of pollen to the nasal mucosa usually does not produce as much reaction after iontophoresis as before, particularly in patients whose hay fever is benefitted by iontophoresis. The normal nasal mucous membrane does absorb pollens; the treated membrane is more like the skin and resists the entrance of the pollens into the tissues.

There is no evidence whatsoever that iontophoresis influences the allergic status of the nasal mucosa or of the organism as a whole. The reactions of the nasal mucosa to the intramucosal tests are not changed except that the membrane does not swell so much.

Persons who have been treated by iontophoresis for over a year and have gone through a siege of hay fever do not have a return of the edema of the tissue. In nonallergic rhinitis the results of the iontophoresis are more permanent.

Nine months ago we reported the following iontophoresis of three patients, in two instances the blurring of the maxillary sinus was improved, while in the third there was no change. It is probable that the decrease in the thickening of the lining membrane was a coincidence. We have not been able to confirm this observation in cases studied later. The lining of the maxillary sinus of a guinea pig, taken eight days after iontophoresis, showed no change. An ethmoid cell in the middle turbinate, studied three months after iontophoresis of the nose showed no change. On the other hand, the one case of ozena that appeared after this treatment had a typical foreign body odor. Washing a little debris out of the maxillary sinus permanently controlled this condition.

In chronic intumescent rhinitis one can often secure just as good a clinical result as by iontophoresis by using procedures that do not cause the deleterious results that we get with iontophoresis. The chronic intumescent membrane may be made quite normal by the avoidance of offending allergens, by desensitization, by the removal of adenoids or by proper diet combined with the use of a vaccine. Patients who have suffered from nasal stoppage for ten years have secured complete relief by the avoidance of allergens, and the nasal mucosa has returned to an almost normal condition. One patient who suffered from a nasal stoppage had a bilateral Caldwell-Luc operation performed several years ago without benefit; later the patient was treated by iontophoresis, without improvement, but did secure relief from the administration of a proper diet plus vaccine and toxic filtrates.

It is axiomatic that iontophoresis should be used only after it has been proven that a satisfactory result cannot be secured by more simple procedure.

The treatment of acute allergic rhinitis is, first, the avoidance of allergens and desensitization. If a co-existent chronic intumescent rhinitis cannot be controlled by simpler procedures we should be certain that the beneficial effects of iontophoresis will outweigh its deleterious action.

SURGERY AND GYNECOLOGY

Abstracts, Reviews and Comments from
LeRoy Long Clinic

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Treatment of Senile Vaginitis with Estrogenic Hormones. By Adolph Jacoby and Benjamin Rabbiner. From the American Journal of Obstetrics and Gynecology, April, 1936, Page 654.

This is a report upon the results from treatment of twenty-five cases of senile vaginitis by the administration of estrogenic preparations.

It has been shown that the estrogenic substances produce a cyclical change in the vaginal mucosa even after the menopause.

The chief complaints in these patients were a varying amount of whitish, rather thin vaginal discharge with itching and a burning sensation in the external genitalia and vagina. Discharge was present in twenty-one of the patients, itching in eighteen, and burning sensation in thirteen.

The vagina and the portio in every instance showed numerous small ulcerations, varying in

size from a few millimeters to half a centimeter, stippling the mucosa. The rest of the mucosa showing varying degrees of atrophy.

The treatment consisted of the administration of estrogenic substances by mouth and by intramuscular injection. The medication by mouth was prescribed three times daily and the injections were given once weekly intramuscularly. The average time under treatment was three and one-half months. No douches or other treatments were combined with the use of the estrogenic hormones.

The eleven patients who were cured had a complete disappearance of all symptoms as well as the restoration of the mucosa to normal appearance. All but one of the remaining patients were relieved of distressing itching, burning and discharge. Relapses occurred in twelve patients from one to five times within a week to five weeks after discontinuing treatment. Renewed improvement followed resumption of the treatment.

The authors draw the following conclusion:

"From the results of treatment of senile vaginitis with these substances, it is evident that the shedding and reformation of the mucosa eliminates the underlying pathology present in vaginitis. The normal mucosa thus produced is better able to resist those factors, whether of infectious or atrophic character, which cause the vaginitis. In this way a cure is brought about.

Even when a cure is not complete, the relief of symptoms justifies the use of estrogenic substances in the treatment of senile vaginitis."

COMMENTS: A similar study to the present one was conducted by Dr. Davis at the Chicago Lying In Hospital over a year ago. In his work, he demonstrated by punch biopsy of the vaginal mucosa both before and after treatment that the thin senile mucosa became thick and stratified as the treatment progressed.

Clinically this treatment is effective in a large percentage of the patients with senile vaginitis. It, however, suffers the inconvenience that treatment in most cases must be continued or the symptoms will recur and preparations by mouth alone are not effective.

Applicable in this situation as well as in the treatment of gonorrheal vaginitis in children, the observation of TeLinde is important. He found that the mucosa in children responded as well to treatment by vaginal suppositories as by intramuscular injection in oil. It therefore seems logical to employ the vaginal route of application of treatment in the senile vaginitis cases as well as in children.

It is also well to remember that numerous means of therapy have been devised for the treatment of this very troublesome condition. Many have been found to be effective only to discover that the benefits were temporary. Wendell Long.

Evisceration Following Abdominal Operations. By Ralph B. Bettman and Gemma M. Lichtenstein. From Archives of Surgery, April, 1936.

The occurrence of evisceration following laparotomy seems to be unpredictable. The uncertainty of this infrequent complication is its chief terror. The authors made a survey of the cases occurring in Michael Reese Hospital during the past ten years and analyzed those factors which seemed of importance to them without, however, being able to reach any definite conclusion.

In 1931 Sokolov analyzed the largest series that has been reported. This series included seven hundred thirty-two cases collected from clinics in Europe and America. He found that almost twice

as many men were eviscerated as women and that the highest incidence was in the first six months of the year, which he thought was due to a lowering of the vitamin C content of the body. He felt that incisions in the upper part of the abdomen ruptured more frequently than did incisions in the lower part, that the greatest number of ruptures were in cases of malignant disease and that operations on the stomach headed the list of types of operations after which evisceration occurred. He stated that evisceration occurs after from two to three per cent of all laparotomies. He found that the maximum number of eviscerations occurred between the seventh and the tenth day post-operatively and that the largest number occurred in patients between the ages of thirty and sixty. The mortality in his series was 32.1 per cent in cases in which resuturing was done and 35.5 per cent in cases in which it was not done.

Meleney and Howes (Annals of Surgery, January, 1934), found that only from one to two per cent of the abdominal operations performed at the Presbyterian Hospital in New York were followed by evisceration. They agreed with Sokolov as to the post-operative period in which most ruptures occurred. They found evisceration most common after vertical incision in the upper abdomen and especially frequent after operations on the gallbladder and gastro-enterostomies and they expressed a belief that the major causes are cough infection and gastric lavage. Their mortality rate was forty-four per cent of all eviscerations.

Colp (Annals of Surgery, January, 1934), expressed the belief that the underlying lesion is the important factor in evisceration.

Grace (Annals of Surgery, January, 1934), also found the largest number of eviscerations after operation in the upper part of the abdomen. He found the mortality lower in those patients in whom evisceration occurred before the fifth day post-operatively than in those in whom it occurred later.

Baldwin (American Journal of Surgery, July, 1934), noted that he had observed no evisceration since he began leaving sutures in place for fourteen days and keeping patients in the hospital for three weeks.

The authors of this article found thirty-two cases of evisceration occurring in the Michael Reese Hospital in the past ten years. During this time 12,445 laparotomies were performed. This number included 5,262 appendectomies, most of which were done with the McBurney incision, one which many authors feel is not conducive to evisceration. For this reason they subtracted the appendectomies from the total number of laparotomies, leaving approximately 7,500 operations exclusive of McBurney incisions. This would give them an incidence of forty-three per cent eviscerations. The mortality rate after evisceration was 37.5 per cent. They found twice as many cases in women as in men, but, as many more women are operated on than men, the sex of the patient apparently played no role. They found evisceration occurring most frequently after operations on the lower part of the abdomen rather than the upper part of the abdomen. They also found evisceration more common from the mid-line incision than from the other kinds of incision and after hysterectomy than after any other type of operation. There were six cases of malignant disease in the group. The evisceration occurred most frequently between the sixth and ninth post-operative days. They did not feel that the method of wound closure or the length of time that sutures were left in place was of any great significance. They did not believe that tension sutures apparently played any

great part in preventing evisceration. They thought that complications, such as coughing, vomiting, wound infection and frequent gastric lavage were of relatively little importance. They were struck with the sporadic occurrence of their cases of evisceration and their definite grouping at certain irregular intervals. This was also noticed by Maes and his associates (Annals of Surgery, November, 1934). This grouping of eviscerations, they thought, was not explicable on the basis of epidemics of grip, bronchial pneumonia or other infections. They thought that no change in operating room technique could be held accountable. They thought that the brand of catgut used could not be held accountable. The incidence of eviscerations in their series did not seem to run parallel with that of apparently poorly healing wounds.

LeRoy D. Long.

The End Results of Thyroidectomy in Four Hundred Thirty-Six Cases of Exophthalmic Goiter. By Arnold S. Jackson. From Transactions of the Western Surgical Association for 1934.

The purpose of this paper was to show that subtotal thyroidectomy is still the most satisfactory method of curing exophthalmic goiter. The word "cure" was used with reservation, it being recognized that the disease may recur regardless of the type of treatment used.

Due to the tendency to recurrence and because of the high mortality following thyroidectomy previous to 1921 (in the so-called pre-Lugol era) many other methods of treatment have been advised such as long continued bed rest, different kinds of medicinal therapy, serum injections, radiation, etc.

The conclusions which were reached by the author were as follows:

A study of four hundred thirty-six cases of exophthalmic goiter in which a subtotal thyroidectomy was performed in one or more stages during the years 1922-1929 inclusive, was presented.

An analysis of the three hundred nine cases traced to date showed 89.5 per cent of the patients are cured, 9.5 per cent improved, and one per cent show some evidence of hyperthyroidism. Thus ninety-nine per cent are either cured or improved, an average of eight and one-half years following operation.

Eighty-eight per cent of the patients are able to perform their regular duties and twelve per cent are performing partial duties.

One hundred sixty of the three hundred nine patients were given a complete physical examination in November, 1934. The data in the other one hundred forty-nine cases was obtained by questionnaire letters. The end results obtained in a study of the two groups are essentially the same. The number of cures was slightly increased in those given a physical examination because a few had interpreted menopausal symptoms as a persistent or recurrence of hyperthyroidism.

Of the three hundred nine patients two hundred fifty-three were cured by one complete thyroidectomy—that is, one or more stages, twenty-two were improved; thirty had a second thyroidectomy, either before or after coming to Jackson Clinic. All of these are now either cured or improved by a second operation. One patient had three thyroidectomies before coming to the Jackson Clinic for her fourth. Two patients were operated upon three times at the clinic. All have now remained well five years or more. In several of these cases the patients stated that their own activities were responsible for the recurrence of symptoms.

With ninety-nine per cent of the patients either

cured or improved eight and one-half years following thyroidectomy further evidence is presented to substantiate the claim that subtotal thyroidectomy is the most satisfactory method known to cure exophthalmic goiter.

The fallacy of gradually reducing the basal metabolism to normal by rest, medication, x-ray and radium, rather than by prompt surgical intervention following proper pre-operative preparation is pointed out. Procrastination of operative treatment in hyperthyroidism results in permanent damage to the cardio-vascular renal system.

To resort to denervation of the adrenal glands to cure exophthalmic goiter seems unnecessary and possibly an unwarranted procedure.

The use of iodine, pre-operatively and post-operatively, the metabolic laboratory, team work, cervical nerve block anesthesia, and the electro-surgical knife have simplified the operation, lowered mortality, reduced recurrences, and increased the number of cures.

A preliminary report was presented of one hundred cases of exophthalmic goiter in which a subtotal resection of the thyroid gland was performed with the electro-surgical knife with but 1.5 per cent of the cases showing evidence of recurrence as against a five per cent recurrence with the scalpel.

COMMENT: Dr. Jackson has obtained marvelous good results. Such a report from a man of his caliber is of great value. No other form of treatment known or suggested could present results like this. At the present time there can be no question that subtotal thyroidectomy is the most satisfactory method of curing exophthalmic goiter.

LeRoy D. Long.

Perforated Ulcer of Stomach: Diagnosis and Treatment. (*Ulcere Perfore de l'Estomac: Diagnostic et Traitement*). By Antonio Bellerose. F. R. C. S. (Canada). *Chirurgien de l'Hopital Notre Dame, Montreal. L'Union Medicale du Canada, April, 1936.*

This article is a brief and definite summary of the facts touching the symptoms, signs and treatment of perforated gastric ulcer.

In general, these symptoms and signs are: A sudden violent pain above the umbilicus (*douleur en coup de poignard sus ombilical*) with an invincible contraction of that portion of the abdominal wall. If there is a history of preceding symptoms suggestive of ulcer of stomach, there can be little doubt about the diagnosis.

The sudden violent pain is practically always in the epigastrium at first. After the lapse of some time it extends into other parts of the abdomen.

The contraction of the muscles is so marked that the outlines of the recti may be seen in thin subjects. Palpation always reveals the intense muscular contraction, the maximum being in epigastric area.

Respiration is thoracic in type.

In ninety per cent of patients there is a history of gastric disturbances, like pain some time after meals, vomiting, occasionally hematemesis. In ten per cent the history of previous disturbances is vague or absent.

Other signs of importance are disappearance of liver dullness and the radiosopic revelation of gas between liver and diaphragm.

The treatment advised is a simple suture of the perforation, with drainage of the gastro-hepatic area, and, in late cases, of the lower abdomen or pelvis.

Attention is directed to the all-important fact that the surgical treatment of a perforated gastric ulcer is an emergency operation ("une operation d'urgence"), and that the prime necessity is closure of the perforation, without gastro-enterostomy or any other additional operation.

The prognosis bears a very distinct relation to the time the perforation has existed before operation. It has been established by bacteriological examinations of the exudate that virulent pathogenic bacteria are practically never present within the first six hours, and if simple suture is done during that time the immediate results are nearly always good, and in the case of many patients there is no further difficulty, provided there is sensible and wise discretion in connection with food and habits.

Bellerose reports nine cases which are illustrative of his position relative to treatment as well as of the clinical picture before operation.

COMMENTS: In connection with the symptoms and signs of perforation of a gastric or duodenal ulcer, the graphic formula of Moynihan should be remembered: "Sudden agonizing pain that does not abate, a board-like abdomen, shallow respiration, an anxious countenance."

It might not be out of place to say a word about one of the details of operation. As a rule, one would do better not to employ a purse-string suture for closing a perforation, and this is particularly true if the margins are firm. By and large, we believe that the uniform employment of through-and-through sutures, either interrupted or continuous, is much better, and there should be sufficient "bite" so that they will not cut through in handling and tying.

LeRoy Long.

Reticulo-Plasmocytomata in Sacro-Iliac Region (*Reticulo-Plasmocytomes Ilio-Sacres*). By L. Sabodini, J. Montpellier and M. Chechan. *La Presse Medicale, March 28, 1936.*

Referring to the history of the development of information about tumors arising from medullary tissue, first described by Rustizky, in the clinic of Recklinghausen, Strasbourg 1873, the authors indicate what seems to be the general belief that the variety of names, such as "myeloma," "reticulo-sarcoma," "reticulo-endothelioma," "myeloblastoma," et cetera, is probably explained by the fact that different investigators have examined sections of what was at first the same kind of tumor but in different stages of propagation.

The type called "plasmocytoma" was first described by Wright, of Boston in 1900.

A case is reported, the principal points being as follows: An indigent man entered hospital because of pain in legs, especially the left one; of weakness and loss of weight.

The walk was difficult. There was a cachectic appearance.

There had been an illness of around six months. At first there was cough, fever, weakness, it being necessary to go to bed.

Pain in the legs began some three months later.

There was a tumefaction about the size of a hen's egg in left sacro-iliac region. It was soft and a little mobile transversely. Radiographic examination disclosed extensive decalcification about sacro-iliac region.

There was a diagnosis of "sacro-coxalgia," and this was followed by an operation when a mass was found in relation with joint. A pathological examination revealed characteristic picture of plasmocytoma.

COMMENTS: One ought to be anxiously sus-

picious in the presence of severe pain in connection with the skeletal structures, associated with emaciation and weakness. If there is not a satisfactory explanation, malignant tumor arising from the bone marrow is always a distinct possibility. While plasmocytomata, although closely related to the lymphoblastomata, may be benign, the diffuse types arising from the bone marrow may be malignant, forming one class of the myelomata (see statement by Francis Carter Wood, page 56, Vol. II, Nelson Loose Leaf Living Surgery).

But plasmocytoma is a very rare type of tumor, and for that reason one ought to think always of multiple myelomata which may appear simultaneously in many bones, "possibly due to a general affection of the bone marrow" (Wood).

LeRoy Long.

ORTHOPAEDIC SURGERY

Edited by Earl D. McBride, M.D.
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End Results of Leg Lengthening. G. Bruce Stephenson and Herbert A. Durham. *Southern Medical Journal*, XXVII, 818, September, 1935.

This report is based on seventeen cases. In two cases, lengthening of the femur was done, and in fifteen cases lengthening of the tibia and fibula was carried out. In each case, the shortening was the result of poliomyelitis. None of the patients was under twelve years of age.

The technic and the apparatus are described in detail. With the type of apparatus used, frequent roentgenograms are not necessary; thus the danger of delayed union is avoided. The time required for lengthening is fifteen to twenty-five days. The lengthening apparatus is left on for from four to five weeks. A cast is then applied, followed by the use of a walking caliper.

In each case solid union was obtained in six to eight months. The minimum tibial lengthening was one and three-fourths inches; the maximum, two and three-fourths inches. One femur was lengthened two and three-fourths inches; the other, three and one-fourth inches.

Osteo-arthritis of the Hip Joint. T. P. McMurray. *British Journal Surgery*, XXII, 716, 1935.

Such great ingenuity has been shown in the classification of osteo-arthritis of the hip joint that, in many of the classifications, it is almost impossible to recognize what is after all a very common condition. The classification generally accepted is the simplest of all, the infective or toxic type, and the traumatic type.

In a study of eighty-nine cases, the author reports that the average age of onset for the bilateral cases was fifty-three years; in the unilateral group, it was thirty-four years. A large proportion of the unilateral cases were preceded by injury to the hip.

The roentgenographic appearance is usually typical, with a loss of joint space, atrophy of the bones and a rim of osteophytic outgrowths lying around the articular margins of the acetabulum. In unilateral cases, there is usually some distinct alteration in the shape of the head of the femur, while in the bilateral cases the head remains normal in shape.

In toxic or infective arthritis there is the prob-

lem of generalized infection, while in arthritis of one hip, whether there be an infectious process present or not it is probable that trauma or an alteration in the joint mechanism was the exciting cause, and the fear of spread of the condition is not present to the same extent.

The different methods of treatment are considered in detail and the author comes to the following conclusion: Manipulation may produce a relief of symptoms and increase movement temporarily. Arthroplasty is the ideal operation, but at present our methods and techniques fail to secure any real benefit for the patient and the operation is a failure. Arthrodesis removes the pain and deformity and greatly increases the stability of the joint, but it is a very extensive procedure and if unsuccessful results in a great increase of strain on the lumbar spine and sacro-iliac region. The bifurcation operation of Lorenz is simple, of short duration, and, if performed correctly, leads to relief of pain and deformity with no loss of stability and does not cause strain on the lumbar regions.

The Etiology of Chronic Arthritis. Chester S. Keefer. *New England Medical Journal* CCXIII, 644, 1935.

The author classifies arthritis as follows: degenerative arthritis, commonly called osteo-arthritis or hypertrophic arthritis; and rheumatoid arthritis, commonly called infectious or atrophic arthritis.

Although the actual etiology of the arthritides is unknown, the author offers the following as the most likely theories.

Degenerative arthritis is due to injuries, excessive wear and tear, or trauma to the articular surfaces. There are three possible theories in regard to the etiology or rheumatoid arthritis.

1. The unitarian theory in which both the rheumatoid and degenerative types are thought to be due to the same etiological agent or groups of agents. The factors which determine the type of arthritis are trauma, focal infections, menopause changes, and habits of the patients. This is thought to be true by many authorities, as there are so many mixed types of arthritis pathologically.

2. Infectious theory. This is thought possible because of the inflammatory symptoms and the fact that there are often found positive agglutination and precipitation reactions to hemolytic streptococci. This theory has also three possibilities within itself: (a) metastasis from a focal infection; (b) toxins absorbed from a focus of infection; (c) reactions of bacteria or their end products on some sensitized tissue.

3. The eclectic theory in which there is considered an imbalance of the nervous, gastro-intestinal and peripheral nervous systems. Gastro-intestinal disorders are commonly found with a decreased acidity, but the author does not feel that there is any definitely convincing etiological background connected with it. Very seldom does one find vascular changes in a synovium in the joints. There is rarely any connection between Raynaud's disease or scleroderma and rheumatoid arthritis. The author does not believe that there are any results obtained by sympathectomy.

In conclusion, the writer states that, although there are no definite etiological facts, there will be a better understanding of the etiology as soon as there is a better understanding of the typing of the disease.

Dislocations of Knee Joint: Report of Complete External Lateral Dislocation

H. Earle Conwell and R. H. Alldredge, Fairfield, Ala. (Journal A. M. A., April 11, 1936), point out that in a total number of about 9,000 fractures and dislocations treated by the orthopedic service of the Employees Hospital, there were six cases of complete dislocation of the knee joint. In four of these cases the knee was dislocated anteriorly, in one case it was dislocated posteriorly and the sixth case was an external lateral dislocation of the knee joint, which is reported in detail. It is their opinion that dislocations of the knee should be treated conservatively; that is, by closed reduction and prolonged immobilization. They also believe that development of the muscles, especially the quadriceps, is of supreme importance, since they have a great deal to do with stabilizing the knee. The etiology, types, classification, anatomy, pathologic disorders, diagnosis, treatment and prognosis of dislocations of the knee joint are discussed.

Treatment of Pernicious Anemia With Autolyzed Liver Concentrate

Theodore G. Klumpp, New Haven, Conn. (Journal A. M. A., April 11, 1936), studied the therapeutic potency of autolyzed liver concentrate-Squibb for a period of two years in the wards and in the hematology clinics of the New Haven Hospital. He found that autolyzed liver concentrate is effective in the initial and maintenance treatment of addisonian anemia. Autolyzed liver concentrate is more potent than liver extract-Lilly derived from the same amounts of liver. In the initial treatment of pernicious anemia, maximal effects have been obtained from a daily dose of autolyzed liver concentrate derived from between one hundred fifty and two hundred Gm. of liver. For maintenance treatment a dose of from one to eight teaspoonfuls daily, on the average three teaspoonfuls, has been found adequate.

Anterior Pituitary-Like Hormone: Clinical Study of Its Effects on Acne Vulgaris

In an earlier paper, Feigenbaum and the author reported the results of treatment of fifteen patients with acne by injection of antuitrin-S. Charles H. Lawrence's, Boston (Journal A. M. A., March 21, 1936), present paper comprises a study of thirty patients by the same method, and a discussion of the results obtained. So far as they parallel those of authors previously cited, his observations are in essential agreement with them. Three-fourths of the patients were between ten and twenty years of age, and in the remaining fourth the acne had appeared during adolescence in all but two, in both of whom it was preceded by changes in the rhythm and character of the catamenia. The onset of the eruption was between the twelfth and fourteenth year in more than two thirds of the patients, and in only one did it appear as early as the tenth year. Its severity was rated as mild in five patients, moderate in thirteen and severe in twelve. The eruption was confined to the face in fifteen cases, to the face and neck in two, and in thirteen was distributed over the face, neck, chest and back. Ten of our patients were males, twenty were females. In the latter group a definite history of an exacerbation of the eruption at the menstrual period was obtained in eight patients; eleven had never noted any such relation, and one stated positively that it did not exist. The menstrual periods were normal in only six of the twenty females. Treatment consisted, as in the earlier series, of injections of two cc. of antuitrin-S every other day.

Injections were omitted during the menstrual period of the female patients, though in no instance has there been noted any effect on normal menstruation, despite the well known influence of the preparation in disturbances of that function. In the patients in whom there was coexisting menstrual disturbance, improvement in both acne and menstruation progressed in equal measure, indicating a general effect on bodily economy rather than one localized in the skin. The duration and amount of treatment necessary to produce results varied greatly in different patients. The factors which determined the variation were apparently the age of the patient and the severity of the disease, but even in patients of identical age and equally severe eruptions a rather wide variation of response occurred. The average dosage in the series has been 3,360 rat units, the maximum 7,700 rat units, in a patient fifteen years of age with severe general acne, and the minimum 300 rat units, in a patient thirty years of age with a mild eruption confined to the face and neck. In the majority of patients, improvement has been apparent in from two to four weeks, and the maximal benefit has been obtained in from twelve to sixteen weeks. Two patients have shown slight relapses, beginning four and six weeks after treatment was stopped and responding promptly to the resumption of treatment. No difference is apparent between the two sexes as regards response to treatment. Ten patients are regarded as cured, since their acne has not reappeared after two months without treatment. Eleven are much improved, showing at present only an occasional papule, and seven show only moderate improvement, owing partly to as yet insufficient treatment and partly to slow response. One patient has moved away, and one has just begun treatment and was included in the series because of significant features in her case.

Prevalence of Vitamin A Deficiency Among Iowa Children

Using a test for ability to adapt to the dark as the means for detecting vitamin A adequacy, P. C. Jeans and Zelma Zentmire, Iowa City (Journal A. M. A., March 21, 1936), found that twenty-six per cent of a rural group and fifty-three of a village group of Iowa children presented evidence of vitamin A deficiency; in an urban group the proportion for the higher economic level was fifty-six per cent, for a middle level sixty-three per cent and for a low economic level seventy-nine per cent. Of the seventy-eight village and rural children who were deficient in vitamin A and who continued under observation, all except three developed normal dark adaptation after a period of vitamin A or carotene ingestion.

Rupture of Kidney Following Pyelography

Louis H. Baretz, Brooklyn (Journal A. M. A., March 21, 1936), warns that the capacity (normal from four to six cc.) of the renal pelvis must not be exceeded in pyelographic injection. Aspiration of the pelvis should be a routine procedure to determine the capacity. To perform pyelography on badly infected kidneys is a dangerous procedure. Whenever possible, in the presence of infection, acute or subacute, the pelvis should be visualized by the excretory route. If the retrograde method is essential, great care must be used. If there is no apparent pain or discomfort after from fifteen to twenty cc., the operator should cease and visualize the pyelogram before attempting an injection of a larger quantity of the medium. Surgery is usually indicated when the urography shows extensive extravasation. In three cases ruptured kidney followed the indiscreet use of the pyelogram.

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The Mortality of Acute Appendicitis* *Consideration of Preventive Measures*

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In a paper presented before the Academy of Medicine in November, 1932, the opening statement is as follows: "Acute appendicitis is a curable disease. If the proper remedy is applied before the inflammation spreads beyond the appendix, the cures should amount to one hundred per cent."

That statement was based on the limited experience and observation of the author. Acute appendicitis, however, occurring as it may in those who have disassociated but serious lesions, will still command treatment. These disassociated lesions may, in certain instances, be of such nature as to make surgical procedures hazardous in themselves. It follows, therefore, that while the statement above quoted may still be true in selected cases, there are complications which will eventually bring about a mortality in simple acute appendicitis.

In the January number, 1936, of *Archives of Surgery*, Schullinger publishes a paper in which he gives the results of acute appendicitis and associated lesions, over a period of eighteen years, in the Presbyterian Hospital in New York. Schullinger's analysis of these cases is, to me, the most enlightening expose of the subject that has ever come to my attention. His studies and his statistics have largely furnished the inspiration by which I undertake to present this paper.

Schullinger divides appendicitis into five groups. The first group is acute appendicitis without any associated lesions, and he gives his definition as follows: "An acute inflammatory process confined almost entirely to the appendix in whole or in part." Out of a total of 2,653 cases, 1,175 fall into this group. The number of deaths in the 1,175 cases was seven, or a mortality of .59 per cent. Two of these cases do not, in my opinion, rightfully belong in this group. Briefly, one was a six year old child admitted to the Hospital with a diagnosis of intussusception; the diagnosis was verified at operation. The appendix was included in the intussusception and on examination after reduction, the operator thought it appeared to be acutely inflamed and removed it. The report from the surgical pathological laboratory was "chronic appendicitis." The patient lived only ten hours after operation. Cross indexing probably explains this case being included.

The second case was that of a twenty-seven year old man admitted to the Hospital because of pneumonia and a failing heart from chronic valvular disease. The abdomen was slightly distended, no tenderness or spasm was present. Patient died five hours later. Autopsy revealed obvious pneumonia, edema of the lungs, cardiac hypertrophy, as well as mitral and aortic stenosis. The abdominal cavity was clean and the peritoneum smooth, pale and glistening. The appendix appeared normal in its proximal two-thirds but the distal

*Read before the Surgical Section, Annual Meeting, Oklahoma State Medical Association, Enid, April 8, 1936.

third was slightly distended and the serosa distinctly congested. Section of this portion of the appendix revealed a few drops of pus within the lumen.

Of the five remaining, one, thirteen years of age, was admitted with a diagnosis of tuberculous peritonitis and chronic ileus. A few days later a rather severe pain developed in the right lower quadrant of the abdomen and operation disclosed an acute inflamed appendix and no evidence of tuberculous peritonitis. Three days later the child developed signs of atelectasis of the left lung, together with bronchial pneumonia. On the eleventh day there was an acute ileus; cecostomy was performed. Following this a chronic cough developed with signs of bronchial pneumonia over the lower lobe of the left lung. Because of the persistence of the cough and pulmonary signs, it was felt that it might be tuberculous, but bacilli were not found on repeated examinations. On the fortieth day severe stomatitis set in, which rapidly spread to all parts of the oral cavity. Patient died on the fiftieth day.

Two fatalities were due to pulmonary embolism, one on the fifth and one on the sixth day following operation. One had an acutely inflamed retrocecal appendix; the other was an obese man, fifty-two, who suffered from marked post-operative distention. The operation had lasted eighty minutes because of difficulty in removing the appendix.

In two other cases, Schullinger states death might have been prevented by the use of spinal anesthetic or avertin, or even local anesthesia. The first was a man of thirty who had a cold and a sore throat at the time of admission. He took ethylene poorly and finally had to have ether by the open method. The operation was long and difficult because of the retrocecal position of the appendix. He developed bronchial pneumonia on the fourth day; coughing provoked disruption of the wound on the eighth day, which was immediately repaired. Death followed in twenty-four hours.

The other was a very obese man of fifty-two, in which the operation lasted one and one-half hours because of high retrocecal appendix. Ethylene ether was used. Post-operative course was stormy because

of progressive distention and bronchial pneumonia of the lower lobe of the right lung. Jejunostomy was performed on the fourth day, at which time there was no evidence of peritonitis, and the patient died twelve hours later.

The death rate in this first series was practically unchanged from year to year throughout this eighteen-year period and a graph made on the basis of progressive five-year periods shows practically a constant level.

In group two, there were 630 cases with twelve deaths. Group two is acute appendicitis with acute local peritonitis. The mortality in this series was 1.9 per cent. Studied in progressive five-year periods, there is a distinct falling of the mortality rate in this group. In the 1918 to 1922 period, the rate was almost four per cent. It was more than three per cent in the 1920 to 1924 group, but from there on, there is a steady decline to the 1929 to 1933 group, in which the mortality was less than one per cent. This indicates that during this eighteen-year period, there has been a definite progress made in the treatment of appendicitis associated with local acute peritonitis in the Presbyterian Hospital.

The third group is acute appendicitis with peritoneal abscess. In this group there were 571 cases, total number of deaths sixty, per cent rate is 10.5. Taking again the progressive five-year period, we find that the death rate in 1918 to 1922 was fourteen per cent. The period from 1925 to 1929 was the least, having declined from the previous period to less than eight per cent; but from this group forward to the last period, namely from 1929 to 1933, it rapidly rose and in the last period it was twelve per cent; showing that at least during the last several years no progress had been made, but rather a loss had been sustained.

Group four is acute appendicitis with acute diffuse spreading peritonitis. In this group there were 329 cases, fifty-six deaths; a mortality of 17.2 per cent. The progressive five-year analysis of these cases show no improvement in eighteen years.

Group five is acute appendicitis with acute progressive fibrinopurulent perito-

nitis. In this group there were twenty-five cases and twenty-two deaths, a mortality per cent of eighty-eight. There were thirteen cases in the first nine years with eleven deaths; in the second nine years there were twelve cases with eleven deaths, showing the results in the latter years are not so good as in the previous.

Summarizing, I quote again from Schullinger's paper: "The total mortality rate from acute appendicitis at the Presbyterian Hospital from 1916 to 1933, inclusive, is 5.08 per cent, or 135 deaths in 2,653 cases. The total death rate for each of the five groups is as follows: acute appendicitis 0.59 per cent; acute appendicitis with acute local peritonitis 1.9 per cent; acute appendicitis with peritoneal abscess 10.5 per cent; acute appendicitis with acute diffuse peritonitis 17.02 per cent; and acute appendicitis with progressive fibrinopurulent peritonitis eighty-eight per cent."

Acute appendicitis is not a preventable disease. We have seen from the figures quoted that the mortality of acute appendicitis *per se* is less than one per cent: we have seen that in acute appendicitis, even with local peritonitis, it is less than two per cent: we have seen that the other associated lesions, namely, peritoneal abscess, spreading peritonitis, and fibrinopurulent peritonitis, furnish the major mortality. We have stated that acute appendicitis is not preventable. We can state with just as much certainty that the associated lesions of acute appendicitis which furnish the vast majority of the deaths, are preventable. It remains for us, therefore, to apply the principles of prevention in such manner as to not permit appendicitis to go beyond the first, or certainly not beyond the second stage, as described in the quotations herein given.

It seems as if we have fallen into the wrong way of thinking about appendicitis. The international classification of the cause of death is not according to the usual conception, certainly, of the laity. We are in the habit of thinking that when a patient with appendicitis dies, it matters not what the complication was, as having had a single entity. For example, comparing appendicitis to other diseases and conditions: If a person has repeated attacks of tonsillitis and subsequently develops myocarditis, or septicemia, we think of

these as distinct entities, and scarcely associate them with the initial cause. This is strikingly true in tetanus, where, for instance, the initial lesion has been a puncture wound.

If we could learn to think of appendicitis in the same light, namely, that of itself it is not so serious except for its associated lesions and complications, and get this thought over to the laity, we might expect some real progress in our efforts to reduce the mortality. After all, we will have to re-educate ourselves and educate the public, if we are to get the desired results.

As shown by the figures, we are not making progress in those grave cases which we too frequently see in neglected appendicitis, and this, in spite of the fact that for the last many years the major portion of the discussions carried on in medical societies and in the journals have been on the treatment and management of the complications of appendicitis. This is as it should be as long as we are to have these complications, and no one is optimistic enough to think that we will not continue having them. It seems, however, that we should go back again to the simpler question of appendix itself. Since we will admit that the complications of an inflamed appendix can be prevented if the proper treatment is applied in due time, the method by which this may be accomplished is the problem before us.

In this paper we will not discuss the treatment of the complications of appendicitis and will assume that everyone will agree that the proper treatment of an acutely inflamed appendix with, or without, local extension of the inflammation, is operation. We assume that this is now generally accepted as proper, in spite of the fact that we are constantly seeing cases of appendicitis that recover from repeated attacks without operation. The time will never come when any of us will be wise enough to be able to state in what cases this happy result will follow. So we hold that the proper treatment is the removal of the appendix at the earliest possible moment, as long as the disease is limited to the appendix or to its immediate vicinity.

The main question is, therefore, how can we get these cases before the grave com-

plications set in. Obviously it will be through education. First, this education should be among ourselves. The symptom syndrome of acute appendicitis as stated by Murphy many years ago, was about as follows: first, abdominal pain. Note that the location of this pain is not stated other than in the abdomen. To those of us from the south at least, it is best described as belly-ache. This symptom is always present in acute appendicitis. Second, is nausea, which is usually present. Third, toxic signs, usually a temperature elevation; and the fourth symptom in this category is described as localized tenderness in the region of the appendix. It is in this last symptom that we find cause for many errors and delays.

The appendix itself and the visceral peritoneum is not supplied with a sensory apparatus that reacts to inflammation in the form of pain. It is only when the parietal peritoneum becomes involved with the products of inflammation, or inflammation itself, that there is pain or tenderness. If an appendix is so situated that it is not in contact with the parietal peritoneum, the disease may go on to rupture and destruction without there being any localized pain whatsoever.

Where is the surgeon of considerable experience who has not seen cases that presented no localized tenderness before the signs of general peritonitis appeared? The point to be made is, that localized tenderness and rigidity mean at least that the products of the inflammation have gone beyond the appendix, and that if we wait for the sign of local tenderness before we make a diagnosis, in many cases, we will do so at grave risk to the patient. Therefore, it seems that any person who is seized with abdominal pain, who is nauseated, and who presents the signs of toxemia, should be considered as most likely having acute appendicitis, and should at least be constantly observed until the diagnosis is found to be otherwise. If we educate ourselves along this line, and are, therefore, competent to pass this along to those who look to us for guidance and protection of their health, we will begin to make progress.

How shall the public be educated? There is ample proof that it can be successfully done. For five years or more, the City of

Philadelphia has conducted an intense campaign along this line and it is stated that the results are striking and that there has been a decided reduction in the mortality of appendicitis in this period. They have educated the druggist not to prescribe over the counter for persons who have abdominal pain, at least, before warning them of the possibilities as to the cause of the pain; they have exhibited placards in various public places, continually reminding the public of the dangers of appendicitis and of its initial signs and symptoms. Lectures have been given to students in the schools and colleges.

Another incident of education, which is closer home, is among the employes of a large corporation, who have been given instruction in health and first aid. The opportunity was furnished in these courses to inform this group of the early signs of acute appendicitis. As a result, we have information direct, that numbers so instructed have gone to physicians when they suffered abdominal pain, for the purpose of having it determined at once, if possible, whether or not they had a diseased appendix as a cause of pain, and, in many instances, it has been found to be the cause.

Education may be conducted by every physician who is in active practice, it matters not what his specialty may be. In making physical examinations, for whatever cause, the physician can remark, without unduly alarming the individual, that appendicitis is a disease which many times strikes without warning; that it may attack anyone, it matters not what their mode of living has been; and that at least the first sign is pain or distress in the abdomen and that this initial pain is not localized in the region of the appendix. We recognize that there is such a thing as appendix phobia. Constipated and nervous individuals are prone to have pain in the abdomen, usually in the right lower quadrant. If, in giving instructions, one will emphasize the fact that the initial pain of acute appendicitis is not in the right lower abdomen, this group of people may be spared considerable worrying.

Then education may be conducted along another line. We will always have a group of people who shudder at the thought of any treatment that implies surgical opera-

tion, and regretfully we must admit that we still have doctors who will try to treat a patient with acute appendicitis in a manner as to avoid an operation. I would like to quote again from Schullinger: "Certain fears and superstitions still exist in the minds of many, that to enter a hospital and undergo an operation is an acknowledgment of defeat, and can result only in certain death. The problem is often exasperating and the practitioner can do nothing but observe the chances of recovery gradually diminishing with the advance of time. When consent to operation is finally given, it may be too late. The practitioner knows only too well that a certain number of cases of acute appendicitis will subside with morphin, rest and the use of the ice bag. He institutes this therapy for twenty-four hours (the most important factor in reducing the mortality is, therefore, lost) and returns the next day. If the patient is better, the therapy is continued and recovery probably takes place. The physician is considered a miracle man; he saved his patient from an operation and "froze" out the appendix. But what if the patient is worse, or only about the same? The physician will decide to send him to the hospital, or else will determine to watch him for another twenty-four hours. In either case, the damage has been done. The patient no longer has a localized process but probably spreading peritonitis due to perforation or gangrene of the appendix. The physician has done "his best;" he has tried to save his patient from an operation and in so doing the patient's life has been jeopardized. So the patient goes to the hospital and either has a long stormy course which may be of great economic loss, or else dies. The result is that the hospital and the surgeon are blamed and the practitioner is completely exonerated. From the standpoint of economy alone, the public should learn that the conservative and economic treatment of acute appendicitis is early, prompt operation."

Recapitulating and summarizing, we can say that acute appendicitis is a disease that shows no favors; it strikes the high and the low; the rich and the poor; the old and young; the weak and strong; none are immune to it.

Appendicitis is a non-preventable dis-

ease which carries a mortality of less than one per cent, so long as the disease is confined to the appendix and so long as the appendix is removed before extension takes place. The mortality of acute appendicitis and its associated lesions is, in well organized institutions, about six per cent, and there are about 24,000 deaths in this country annually from these causes. With a mortality rate of acute appendicitis uncomplicated at one-half of one per cent, the total mortality should not be over 2,000 annually. This means that since the associated lesions of appendicitis are preventable, that if the disease is treated while it is still limited to the appendix, there will be a saving of about 22,000 lives annually. Does not this possibility justify our using our best efforts to attain that figure? There is no reason to believe that the incidence of appendicitis will ever be lessened. We need not give any thought to that consideration, but if we put our shoulder to the wheel, we may greatly reduce the mortality that comes from those lesions that are preventable.

We should look upon appendicitis as a disease that demands consideration, it matters not what other co-existing diseases may exist, so long as those co-existing conditions are not hopeless. For example, we might be excused from operating on a person who has acute appendicitis in the presence of the last stages of a malignant disease, or of tuberculosis, but there are many conditions and diseases which do not constitute contraindications. For example, the contagious diseases, infectious diseases, pregnancy, tuberculosis in all but the last stages, etc., are not contraindications. I have gone into a home quarantined because of scarlet fever and operated on a child, in the height of the eruption of this fever, for acute appendicitis. Convalescence was uneventful.

We must change our way of thinking about appendicitis. First, we must look upon simple appendicitis as a disease which usually has very few but constant symptoms. Marked tenderness of the abdomen, particularly with rigidity in any portion, is a sign that complications are about to take place if they have not already done so. Therefore, we must take such steps as we can and as soon as we can, to prevent further extension. We

must learn to look upon appendicitis as a condition which brings about complications which are the real causes of death. Therefore, as a prophylactic measure, we must remove the appendix when it is diseased, in order to prevent those complications.

We should use every opportunity to educate the public in the early signs of this trouble. Appendicitis is not necessarily a public health question, in that it is not a communicable disease, but it is an economic problem and therefore the public should be interested, and this would justify the public health agencies assisting in the campaign of education. One of our recent commissioners of health conducted such a campaign during his incumbency in office.

This is a problem that belongs to all of us, all physicians should be interested and at every possible opportunity when in contact with people education should be carried on.

* * *

DISCUSSION

Dr. C. E. Northcutt, Ponca City: Unfortunately, when we read a paper or hear a discussion on appendicitis we are prone to think of it lightly, but I am glad to see so many doctors here are interested in this most important subject.

Many of us are drawing much surgical work from appendicitis. To many of us, our philosophy of medicine is the happiness we derive from the practice. The more successful we are, the greater the pleasure. The care of patients with pathological appendices forms a large percentage of our practice, so it will be seen that the more successful we are with the care of an appendix, the greater the pleasure that will be derived. It is a well known fact that for every loss we have in this type of work it is necessary to complete a hundred successful cases.

In this paper that has just been read Dr. Reed has very ably classified the types of appendices. We have the acute appendix, the acute appendix with local peritonitis, the acute appendix with appendiceal abscess, the acute appendix with spreading peritonitis, and the mucopurulent fecalith type of appendix.

Now from the percentage point of view, which is the way we must consider our work—bankers consider theirs that way, and we, as physicians, must consider our success on a percentage basis—in the first two classifications the death rate is approximately one per cent. Undoubtedly this is due to early diagnosis and treatment. It should be our aim to always keep the mortality in this type of condition at one per cent or lower. In the other three classifications we have made some mistake, because the majority of complications are preventable. Mistakes are usually a misdiagnosis, or we procrastinate and try to save the patient financially at the expense of his health. When we do this, the case falls into one of the last three classifications where the mortality runs between thirty-five and forty per cent.

Dr. Reed has covered this field very carefully, and in detail, but there are two or three points which I wish to mention.

We think of an appendix as we think of a man's face. All of us have noses, but there are no two noses in this room exactly alike and no facial characteristics exactly the same. The same is true with the appendix. However, I like to classify an appendix in one of two main groups: First, where the base is funnel shaped. The other, where the base is quite narrow.

A patient with the funnel shaped appendix is the type that will go on and have repeated attacks of pain in the side, or chronic appendicitis. The other type is the one with the narrow lumen; an attack in this type of appendix is usually fulminating in character.

Every abdominal pain should be considered as possible appendicitis until proven otherwise. In cases where the appendix is suspected, it is our duty to first convince the patient, and I believe that most of the medical profession will agree, that the only treatment is surgical. The appendix will have to be removed sooner or later; the sooner the better.

Of course, morphine should never be given to a patient with abdominal pain until the diagnosis is made and appendicitis ruled out. If morphine is given, the symptoms will be masked, and where an appendix would otherwise be taken care of in one of the first two classifications it

will fall into one of the latter classifications, with an increase in mortality. A patient with abdominal pain, much less a suspected appendix, should never be given a physic; if there is any doubt, an enema should be given. No one will do a laparotomy in an acute abdomen without complete laboratory examination, including differential count and sedimentation test.

An acute appendix is out on the end of the cecum like an egg on a whip. The gall-bladder is more fixed, and when old Mother Nature sees trouble she will throw the omentum around it, but with the appendix loose in the abdomen this is very often impossible, and it cannot become walled off so easily.

I wish to express my appreciation for having the opportunity to hear and discuss this very important paper which was so ably presented by Dr. Reed.

Dr. Hirschfield: I would like to make a few remarks on the psychology of this subject. The professional side has been covered very well by Dr. Reed and Dr. Northcutt. I think we should bear reference more to the psychology with the patient and the family. The professional side is pretty well taken care of for we can take the patient to the hospital and the treatment is pretty well standardized. If we get them early there is not much chance but the poorest of us will have success. What this probably needs is more salesmanship. Ordinarily I think perhaps many of us are better salesmen than surgeons, but this is a case where salesmanship is important. If we get them early the operation is simple and safe; I would rather have the youngest interne operate in the first twelve hours than the best of surgeons take the case after complications have developed. There are lots of things we have to combat, and one is the question of irregularity in the patient's diet; that always comes up. Most any of us can go back in our minds twenty-four or forty-eight hours and think of something a little unusual we have eaten. The layman does that during an attack of belly-ache; he thinks of cucumbers, hot dogs or hamburgers or something he has eaten and sells himself the idea that is the cause of his stomach-ache. I don't think I can recall a case of acute appendicitis where the patient couldn't think of something he

had eaten in the last twenty-four hours that might not be the cause. I have seen many with a diagnosis of ptomaine poisoning already made by the patient or his family. All young people and most old ones have a diagnosis already made. Another thing we should do is to educate the profession that while many of these cases are very typical, I think we have been oversold on the textbook characteristics of appendicitis. Most of us are prone to think that in appendicitis the diagnosis stands out like the nose on a man's face and can't be mistaken by anybody, but there often comprises some syndrome of symptoms that we don't always have. We all want to understand that when we have the typical textbook case we have an advanced case. Temperature, leucocytosis, nausea, tenderness, especially with vomiting, is always an advanced case. If we get these cases early enough to reduce our mortality we should get them before they are so typical that even the internes or students can make a diagnosis. The physician can conscientiously feel that he had better err on the right side. If he is not sure he ought at least to get the patient to a hospital where he can be watched and where they can get laboratory work and with the standpoint of leucocytosis rule out any possible right renal lesion. Our profession has always been very backward about selling itself to the public. We have let the various quacks sell themselves to the public while we have stood back on our dignity and ethics and have not advanced our own ideas to the public. We should educate ourselves to sell ourselves in the practice of the profession. I think in this connection the Medical Society and the American College of Surgeons and even the local societies ought to get out a little leaflet—department stores get to where they definitely check every piece of mail that goes out and their monthly statements, and if they don't weigh enough to make up the limit allowed for postage they add some leaflets—and I think we as a profession ought to do the same thing. We should have little sales talks on the danger of appendicitis authorized and sponsored by the parent societies, the A. M. A. and A. C. S., and inclose this literature in our monthly statements. They would be read and in my opinion would

be an aid; in other words, what we need is salesmanship as well as plenty of good surgery.

Dr. Dickson: I am glad Dr. Reed brought out the one point about these patients in what he called an old-fashioned belly-ache. We read in these textbook pictures of pain of acute appendicitis being situated in the pit of the stomach and radiating around the umbilicus and around the lower stomach. That is not correct in all cases. I have found with the first attack of appendicitis that is so, but if you have a patient who has repeated attacks of appendicitis or recurrent appendicitis in which the appendix is thickened and infiltrated, then you may have the pain any place in the abdomen. Then you can have pain in the lower part of the abdomen; you can have pain starting in the right side over the appendix. About the temperature, I don't believe you can go much on temperature, because I was thrown off by that just here the other day. The patient had a temperature of 103 and 103½. This pain was not localized; there was pain in the lower abdomen as low down as it could possibly be. We waited eight hours and operated the case and it was a very acute appendix. It was thick; the walls were thickened. It had that bluish tinge, acutely inflamed, and on the end of the appendix there was a club with a thin wall just keeping from rupturing. The blood count was high. Fortunately we got this case before it ruptured. Another thing about the acute appendix is the morphine. I saw a girl eight years old whom I couldn't tell anything about. She had been sick for three days. We gave her a small dose of morphine, sent her into the hospital, and in four hours we were able to localize the condition. So I believe if you are where you can watch your patient carefully and see them often that a small dose of morphine will help you localize your symptoms. I don't believe, like Dr. Northcutt said, that we should give large doses that mask the symptoms. But I have never seen morphine given in sufficient quantities to relieve the muscle spasm that you would have in an acute appendix. It doesn't take a very large dose of morphine to quiet down the pain in the abdomen with acute appendicitis. Another thing is nausea. This nausea may not come on

early. You see a good many people with acute appendicitis, definitely acute, and the nausea does not come on for twenty-four or forty-eight hours later, and generally in these cases when that happens we find one of these thickened appendices, and I believe the nausea means that we have definitely an appendix and when we get that it means that operation should be done.

Dr. Mark: There is one question I should like to ask. What does Dr. Reed consider the value of the blood count?

Dr. Campbell: I would like to ask this question before I forget about it—what is the opinion of the doctor on chronic appendicitis. Of course, I realize we have chronic and recurrent attacks of acute appendicitis. I am always in doubt about that. Talking about prophylaxis, in the very few years I have practiced medicine I have observed that I have taken out a number of appendices in children whose mothers I had delivered and were still in bed during their maternity days, and it might lead one to wonder whether diet might lead to appendicitis in these children. I would like to just briefly talk about a case I had. I practice in the country and probably run across a few things the men in town don't see. This boy had been sick three months. I have often wondered about the time in a case where the appendix had ruptured and we had acute peritonitis. This boy's father told me he thought the boy had a ruptured appendix because he himself had been operated upon and had had the same symptoms, nausea and vomiting and diarrhea, and this had gone on week after week for three months. He was in a moribund condition. He had bloody diarrhea—he had not failed a day to have a stool—partially dilated pupils, in all a pitiful case. It was the kind of a case that makes you feel crazy and get mad all over. But the interesting part of the case was that when the boy died, through a little pressure on the father I was able to get an autopsy, and found a sanguinopurulent peritonitis with the appendicial abscess you would expect to find, and there were three kinks or adhesions that must have caused obstruction and it was a wonder they hadn't already caused an obstruction. On the right side was a perinephritic abscess; endocarditis, marked on left side,

mitral valve. The spleen was very red and inflamed and there was nephritis in the kidney on the left side and quite a bit of cellulitis. This was to me an eye-opener and answered the question I had often thought about: How long will they live?

Dr. Reed: I will talk briefly. This question about the blood count; it is of value in those very few cases in which we are in doubt. We do them routinely but as soon as the blood is obtained the patient goes on to the operating room and we do not wait for the report. In those few cases where it is difficult to say whether it is an inflammatory condition in the abdomen or intestinal upset from other causes, then the blood count may be of value. As to

chronic appendicitis, we have abbreviated symptoms of the acute. There is pain in the abdomen without reference to any particular location. A lot of people who have pain in the side get appendicitis phobia. I don't recognize that at all as a sign of appendicitis, and if that is their only sign I immediately tell them they probably are constipated. Chronic appendicitis has just abbreviated, very mild symptoms of acute appendicitis, namely, general disturbance in the abdomen without any pain referred to the locality. I would like to go ahead and discuss it further but time will not permit. I wish to express my appreciation to you gentlemen for the discussion.

TRAUMATIC SHOCK*

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A Symposium on Traumatic Surgery would not be complete without some discussion of shock. The term shock is not a new one, but is one which has been used very loosely. It has always been mysterious and still is generally misunderstood. It is probable that the expression was originally used to designate a sudden collapse due to a severe wound. Hippocrates did not use the word shock, but he did appreciate the seriousness of wounds. John Hunter discussed shock in 1793. James Lotta in 1795, employed the term shock with the general meaning now applied to it. In 1870, Samuel D. Gross characterized shock as "a rude unhinging of the machinery of life;" and his description of the clinical picture has never been improved upon even though many advances have been made in our knowledge concerning its mechanism.

Through the investigations of many workers, much of the mystery of shock has been clarified, especially since the World War. Our knowledge is still far from complete but we have learned cer-

tain facts regarding the cause of the syndrome, its mechanism, and behavior. We have a better understanding of the problem. We anticipate its onset, think in terms of prevention, and attempt to carry out effectual treatment.

Cannon describes traumatic shock "as a general bodily state which occurs after severe injury and which is characterized by a persistent reduced arterial pressure, by a rapid thready pulse, by a pallid or grayish or slightly cyanotic appearance of the skin which is cold and moist with sweat, by thirst, by superficial rapid respirations and commonly by vomiting and restlessness, by a lessened sensibility and often by a somewhat dulled mental state."

E. M. Cowell, during the World War classified traumatic shock into two types: primary and secondary. Perhaps a clearer classification would be immediate and delayed. Primary shock is defined as sudden collapse occurring immediately after severe injury. Primary or immediate traumatic shock is infrequent in occurrence, and in the absence of severe hemorrhage, has been considered due to some derangement of the nervous system. Since Goltz

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produced primary shock in 1863 by traumatizing the viscera of a frog, little knowledge has been added to this problem in which the symptoms of shock are immediate in onset. The cardinal reason for the apathy, pallor, weak thready pulse, cold extremities, low blood pressure and vomiting of immediate shock, has never been interpreted. Primary shock *does* occur but is *rare*. On the western front in 1916, Santy observed the severely wounded during transportation. He found the temperature to be normal, the pulse to be rapid, but of satisfactory tension, and the general state was not disturbing. As Santy expressed it, "The wounded was not yet shocked." Likewise in civilian life we frequently see a similar picture. A severely traumatized patient is admitted. The case may be an extensive burn, multiple fractures, or a case of visceral trauma. The patient is noticeably calm and seemingly collected. He complains very little and is almost indifferent to his injuries. His temperature is normal and though the pulse rate is increased, it is not very rapid. The blood pressure may be within normal limits. To repeat Santy's expression, "He is not yet shocked." Here, unless one is on the alert, mild and unrecognized primary shock may be allowed to progress into secondary or delayed shock.

Secondary shock, however, admits investigation and considerable information has been obtained concerning the factors involved in producing it. The symptoms characteristic of secondary shock have been produced in animals repeatedly, and by several methods: by bleeding, by traumatizing the intestines, by traumatizing large masses of skeletal muscle or by extensive burns. The work of Cannon, Blacklock, Underhill, Phemister, Mann, and others has convincingly attributed the symptoms of shock to loss of blood volume as the primary essential phenomenon. This does not mean hemorrhage to the outside where early death usually occurs if the bleeding is not controlled. On the other hand, following trauma to the tissues, there is an unexplained increased permeability of the smaller blood vessels which results in a loss of plasma into the tissue spaces of the traumatized part. The blood pressure is thereby progressively lowered on account of the increasing loss

of blood volume. Concentration of the erythrocytes is resultant until there may be a ninety per cent plasma loss and the haemoglobin may be forty per cent above normal. Unless there is a reaction to this plasma loss which means decreasing blood volume and continuous lower blood pressure, a point is reached when the blood supply to the tissues becomes inadequate and the body mechanism fails. The symptoms characteristic of delayed shock appear and death ensues. Analyzed more critically the apathy, pallor, cold skin, sweating, vomiting and weak pulse of established shock are dependent on an inadequate supply of blood to the tissues. The temperature is low. The body metabolism is below normal. When an individual is damp or cold he may shiver or shake which is a heat producing phenomenon. However, when shock is established, the body is unable to react, and the temperature is further reduced by the profuse sweating which is characteristic. The reduction in blood volume is reacted upon by vasoconstriction which maintains the arterial pressure at or near normal. Notwithstanding, there is a decreased cardiac output and if the circulating blood volume continues to diminish the blood pressure declines in spite of vasoconstriction. Finally there is a failure of the vasomotor mechanism and vaso dilatation results. Associated with this process the decreasing blood volume results in concentration of the erythrocytes, viscosity of the blood, capillary congestion, and anemia of the periphery. Anemia means lack of food, lack of water, and lack of oxygen and in the presence of anoxemia there is acidosis. A series of vicious circles presents itself. The increased permeability of the capillaries decreases the blood volume which lowers the blood pressure. The plasma loss creates increased concentration of the erythrocytes and congestion of the capillaries which results in anoxemia and necrosis. Although the vasomotor center is the last of the bulbar centers to fail from anemia, with no improvement in the cerebral anemia and anoxemia, collapse of the vasomotor center occurs.

This is the picture of established shock. It is not the picture we should look for but the picture we should attempt to prevent or abort. When shock has become

established, treatment is of no avail and there is but a momentary pause in the act of death. When the low blood pressure persists, resulting in anemia of the preferential processes and anoxemia, the vasomotor center loses its capacity to maintain vascular tone and no known agent will bring back the blood flow to normal.

We see and recognize primary shock rarely but we know that mild and unrecognized immediate shock may progress into delayed or secondary shock, and though it is hardly possible to entirely prevent primary shock, anything which decreases the primary shock will be prophylaxis against delayed shock.

Therefore, as prophylactic measures to be instituted immediately, the following are of major importance: Remembering that patients who are suffering from recent trauma or who are in a state of impending shock are hypersensitive to every additional trauma such as rough handling, exposure to cold, wet, or any operative procedure; avoid unnecessary handling. Do not place the injured in bed, shortly move him to x-ray, and then rush him to surgery as is too frequently done. Maintain normal temperature by wrapping the patient in blankets, and applying hot water bags between the blankets. Hot liquids by mouth are beneficial if tolerated. Expose the body as little as possible by uncovering one part at a time. Apply temporary splints at once, which lessens the pain, the trauma, the hemorrhage, and impending shock. If there is external hemorrhage a tourniquet should be applied and not forgotten after being applied but removed in less than an hour and re-applied if necessary. Give morphine in large doses and often, as it is the only drug of real value. It relieves the pain and restlessness. It lowers the blood pressure but in so doing lowers metabolism when there is oxygen need for maintenance of chemical changes. Adrenalin, pituitrin, camphorated oil, etc., are of only temporary value. They do not improve the blood volume, but merely increase the arterial pressure temporarily, which is not needed and in reality decreases the cardiac output. Vasoconstrictor drugs decrease the amount of blood to the organs rather than increase it. Fluids should be given by mouth, *per rectum*, by hypo-

dermoclysis, and intravenously. The introduction of some fluid into the blood vessels which will remain there is the ideal sought. That fluid is not known. Fluid tolerated by mouth and rectum is of real benefit. Fluid given intravenously has only a temporary effect in profound shock on account of the permeable capillary walls. Hypertonic gum acacia solution is recommended and given intravenously to maintain blood volume but its real value is questionable. Whole blood transfusion, given early is a very valuable method of replacing blood volume, raising the arterial pressure and at the same time furnishing oxygen to the tissues. Next in comparative value come the saline and glucose solutions which should be given by all routes in large amounts.

When patient is admitted in potential shock, keen judgment is necessary in deciding if and when to operate. Prompt necessary surgery before shock develops may be wise, with transfusion preceding or during the operation. However, if some signs and symptoms of secondary shock are present, the patient is cold, depressed, and even though the blood pressure is not low and the pulse is fair; delay, heat, fluids, and rest will improve the condition before any surgery is done. When prompt surgery is mandatory expose the patient as little as possible. Use extreme gentleness and meticulous haemostasis. Before any surgery is begun remember that surgical interference may augment the shock, cause a sharp fall in blood pressure, vasomotor collapse, and death. Consider the surgical procedure, the hemorrhage, and do not overlook the depressant effect of the anaesthetic.

In conclusion, the term shock used for years and rather loosely is now used to designate a state of exhaustion which has been rapidly developed by psychic, traumatic, toxic, or thermal stimuli. Its primary cause is not known. The clinical picture is a result of decreased blood volume.

The treatment of established shock is neither satisfactory or successful. We should, therefore, attempt to recognize and render intensive prophylactic treatment to all traumatized patients in whom impending shock is suspected. Having an

understanding of the cause, the course, and the effects of traumatic shock, close observation, frequent blood pressure read-

ings, and intelligent and adequate prophylactic measures should be promptly instituted.

Gonorrheal Ophthalmia Treatment*

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TULSA

The treatment of infantile and adult gonorrheal ophthalmias has been so unsatisfactory that a great variety of remedies have been tried, which at the beginning, were thought to be a panacea, but one by one they have been discarded and new ones tried. The object of this brief paper is to report four cases treated last year with one of the newer remedies in the hopes that the discussion will bring out something interesting and the experience of others with this and other treatments which will be beneficial to all of us.

Gonorrheal ophthalmia in infants makes its appearance within a week after birth, but the ophthalmia neonatorum which develops after the first week is more usually caused by the pneumococcus or Koch-Weeks bacillus.

A few years ago the protein treatment was adopted almost universally with marked success, but it has now lost, more or less, its standing, although it still has many strong advocates, but my experience has not been satisfactory. The protein injection intermuscularly seemed to work miracles in some cases, but its action is not uniform in all individuals and can be likened to cold serum which seems to be a panacea at times, and again have no more effect than a hypodermic of sterile water. The one risk of milk injections seems to be anaphylaxis, so that it is always wise to have adrenalin at hand and to give 0.6 cubic centimeter (ten minims) hypodermically at the first indication of distress. Gluteal abscesses may occur, but they respond rapidly to the orthodox treatment.

Nevertheless there are several groups of

patients in which milk injections are definitely contra-indicated. These are specified by El-Bakly thus: (1) weak and debilitated patients especially mirasmic children; (2) tuberculous patients; (3) patients with kidney diseases; (4) and women in the last months of pregnancy.

One of the first things, when we see a case of gonorrheal ophthalmia, is to protect the other eye. This has been done for years with Buller's eye shield, but in case you cannot secure any of these shields, a very satisfactory one can be made from an old regular x-ray film from which the chemical has been removed. Some prefer that to the Buller's shield as it is not so cumbersome.

Silver nitrate has been used from time immemorial in these cases in all strengths. The original Crede method in the new born was the instillation of two per cent solution of silver nitrate in the eyes at birth as a prophylactic, but it was found that one per cent solution was just as efficient and there was no possibility of an unsatisfactory result.

This method of treatment of the new born has become so popular that laws have been passed in forty-four states requiring the application of one per cent silver nitrate to the eyes of all babies at birth.

The use of silver nitrate drops in the eyes other than the Crede method is dangerous and may result in more or less infection of the cornea, in case of an abrasion of the epithelium, and no doubt has been the cause of many opacities which we see in larger children, and are told by the mother that same has been there since infancy, and it should never be used ex-

*Read before the Eye, Ear, Nose and Throat Section, Oklahoma State Medical Association, Annual Meeting, Enid, April 8, 1936.

cept by a competent nurse under the physician's instructions, but is often used to brush the lids in various forms of conjunctivitis, but should be followed with a boric or saline irrigation.

The cause of twenty per cent of the blindness was formerly caused by gonorrheal infection but after the adoption of the Crede method, the percentage has fallen very materially and the percentage at this time is very small.

The pannus caused by trachoma appears to establish an immunity to gonorrheal infections and you seldom see a gonorrheal infection in a trachoma patient.

Ice compresses have a very good influence in controlling swelling of the lids and can do no harm even though it is not curative, it is more or less soothing to the inflamed and swollen lids.

The four cases that I previously referred to were in children from nine to twelve years of age, which came to the Morning-side Clinic for treatment for ordinary sore eyes. These cases were all girls, but vaginal smears failed to show any gonorrheal infections. But in three of the cases we were able to get a history of gonorrheal infection in some member of the family or household and the children, no doubt, acquired it from using the same linen, or handling objects, door knobs, and so forth, that had become infected from the hands of the adults. One of these cases had both eyes infected upon admission to the hospital, but the other three cases, one eye only was infected and by placing the shield over the good eye, confined the infection to the original eye.

The treatment followed in these cases after the sound eye had been covered with the shield was boric acid irrigations; cold compresses, which were used where there was much edema, and the instillation of 1-3000 solution of merthiolate every two or three hours. The eyes were irrigated with boric solution each time before the merthiolate was applied and some of you may be of the opinion that the boric acid should have credit for the results, but it is doubtful if boric acid alone ever cured a case of gonorrheal ophthalmia.

There did not seem to be any irritation following this treatment, and in one case

the nurse misunderstood the order and used 1-1000 solution, in which case the after effects could not be distinguished from the ones that had the weaker solution.

The education of the soldiers during the World War and the health magazines have done a great deal toward obliterating many causes of blindness and I hope that blindness from gonorrheal infections eventually will be entirely eliminated.

* * *

DISCUSSION

Dr. Albert N. Lemoine, Kansas City, Mo.

Recent researches have quite definitely demonstrated that most of our immunity is established through the skin. The past year gonorrheal filtrate which is given intradermally was introduced. Being given intradermally it comes under the category of immungens producing immunity through the skin. In the past year we have used it in several cases of gonorrheal conjunctivitis. One case in an adult having a corneal ulcer in the lower quadrant and another case in an infant which had a perforated ulcer in the same location. In both these cases the corneal condition was immediately arrested and cleared up with negative smears in an unusually short time. The adult had practically no scar left while the infant had only a scar the size of the perforation. Uncomplicated cases were also treated with the gonorrheal filtrate and they cleared up with negative smears unusually rapidly. The gonorrheal filtrate should be given intradermally, beginning with a small dose, in an infant about one-half minim and in the adult two minims, increasing by an equal amount every two days if the reaction is not too severe. The subsequent injection should be increased less or not at all if the local and general reaction is severe.

I strongly recommend its use in complicated cases.

A Thirty-four Year Record

The Physicians Casualty Association of Omaha has recently published its report for "thirty-four years of uninterrupted usefulness" in which they show payments to physicians for sick and accident claims of \$535,052.98—over a half million dollars. The report further shows they have a surplus fund of \$1,350,000 as evidence of their financial ability to pay what they promise to sick or disabled members.

Cyclopropane in Comparison With Other Anesthetic Agents*

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All of you well know that the anaesthetist of this age has a large number of agents from which to select his anaesthesia. We have all heard arguments pro and con for the various agents. Thus, we thought it would be well to make a comparison of a new and coming gas with actual and unbiased statistics in our own cases. We have given to date something over six hundred cases of cyclopropane, and for the sake of comparison, we selected three hundred cases and compared the post-operative morbidity and mortality with a like number of cases over very nearly the same period of time. This series comprises both clinical, private and charity cases. This comparison will be with the most common agents, such as ether, nitrous oxide alone or in combination with ether, spinals using procaine, and ethylene.

In the ethylene series you will note that we are using one hundred and twenty-seven cases instead of three hundred. As we use our ethylene mainly in O. B. cases and did not think it would be a fair criterion to compare this kind of anaesthesia with surgical anaesthesia. We well realize that there is likely to be some controversy over some of our results that will appear in some of the slides. This comparison is as nearly accurate as is humanly possible to make it and it is not intended to boost one agent and condemn another.

For you who are not familiar with cyclopropane, we will give you a brief regime as to its characteristics, etc. It was first administered to human beings in 1929 by Dr. Ralph Waters of the University of Wisconsin. It is a colorless gas with a characteristic odor that to our sense of smell is similar to the odor of chloroform. It is about one and one-half times heavier than air. It is inflammable but no more so than most other agents that are so com-

monly used, and according to most authorities, it is less explosive in the mixtures used than the other agents. Since it is a gas it is administered by the closed method.

The number of operations that were done are listed according to systems under the various agents and are shown in the following table:

	Cyclo- propane	Ethylene.....	Nitrous Oxide	Spinal.....	Ether.....
Upper abdomen ...	25	4	22	1	1
Lower abdomen ...	84	75	109	212	67
Head and neck	23		29		66
Chest	55		9		18
Perineum-Rectum	49		26	77	6
Extremities	78	40	81	10	104
Miscellaneous	36	10	24		30
Total	300	127	300	300	300
Supplemented with ether or other agents	60	65	244	52	

In reference to preliminary medication, that is, the narcotic, etc., we do not use as large a dose of the opiate and use preferably scopolamine instead of atropine with cyclopropane. Since the cyclopropane is not a respiratory stimulant we must bear this in mind when writing the preliminary medication, as with the larger doses we are likely to get some respiratory embarrassment.

The carbon dioxide absorption technique was used in the administration of all the gaseous agents in this series, as that has been our usual routine for some time.

The signs of anaesthesia under cyclopropane may be compared to those of ether, differing slightly in a few respects. In contrast to the other anaesthetic agents, the respiration under cyclopropane more

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nearly simulates the normal. In the stage of deep or fourth plane anaesthesia the respiration becomes gradually more depressed, and if pushed still further, stops altogether but does not as a rule become irregular or "jerky" as it does with ether. If respiratory cessation occurs, pure oxygen under slight pressure exerted on the breathing bag is sufficient to cause the patient to resume breathing and the anaesthesia may be lightened.

By reason of the high oxygen content in cyclopropane anaesthesia, we feel it has a decided advantage in this respect over the other agents. Even with ether by the open or closed method, we personally feel that the patient does not get all the available oxygen that he gets with cyclopropane. We use approximately eighty per cent or more oxygen with cyclopropane.

In rapidity of induction, cyclopropane is in the same category with the other gases. It lacks the smothering features of nitrous oxide. It lacks that very unpleasant and obnoxious odor of ethylene. Its stage of induction is free from the choking and long unpleasant induction of ether. From those patients who have had the other agents administered to them, as well as cyclopropane, they show their very emphatic preference for the latter.

In reference to the recovery, the patients as a rule are a little slower than are the patients in whom the other gases have been administered to alone, and not in combination with another agent.

The question about surgical relaxation arises. Spinal naturally stands at the top of the list. Unfortunately not all patients can take spinals and not all of them will permit one to be given, and it has its drawbacks as well as any other agent. Ether in most persons' hands stands next, although we feel we are able in a majority of cases to get relaxation of the same degree with cyclopropane, as has been proven in its use in rectal cases and gall bladder surgery. Very exceptionally has it been necessary to add another agent such as ether, chloroform, etc. Nitrous oxide with oxygen offers practically no re-

laxation for abdominal surgery. Ethylene, as a rule, will "get by" if the surgeon is tolerant of some rigidity. In the way of gases as to potency, relaxation, etc., cyclopropane certainly heads the field. By reason of the quiet rhythmical breathing, we feel that it overshadows ether as far as the ease under which the surgeon operates. In this series of cases it was possible to obtain sufficient relaxation for the satisfactory performance of twenty-five upper abdominal operations, using cyclopropane, twenty-two under nitrous oxide and ether, nine under open ether and one under spinal. This latter in reference to the spinal can perhaps be explained in that spinal anaesthetics during this series were mainly confined to operations below the umbilicus. In our series in the lower abdominal cases, two hundred and twelve, or thirty-eight per cent, of the cases were done under spinal, eighty-four, or sixteen per cent, under cyclopropane, one hundred and nine, or twenty per cent, under nitrous oxide and ether, and the remainder equally divided under open ether and ethylene alone or in combination with ether.

The pulse rate is slower and more nearly normal when using cyclopropane as compared to other inhalation agents and somewhat resembles that observed under spinal.

In making a comparison of the post-operative complications occurring following the use of various anaesthetics, we realize that many factors are to be considered, such as the type of operation, the amount of hemorrhage occurring, the amount of trauma to the tissues, the duration of the operation, and many other things.

We feel, however, that since the percentage of pre-operative complications was very nearly the same in each group, we can determine to some extent what part the anaesthetics played in the final results.

The major post-operative complications are listed in the following tables:

	Cyclopropane 300		Ethylene 127		Nitrous Oxide 300		Spinal 300		Ether 300	
No. Cases	Maj.	Min.	Maj.	Min.	Maj.	Min.	Maj.	Min.	Maj.	Min.
	220	80	100	27	179	124	220	80	200	100

POST-OPERATIVE COMPLICATIONS

RESPIRATORY SYSTEM

	Spinal	Nitrous Oxide	Cyclopropane	Ether	Ethylene
Pneumonia	1.66%	1.33%	.66%	.66%	None
Bronchitis	Ethylene	Cyclopropane	Nitrous Oxide	Spinal	Ether
Pharyngitis.....	15%	7.6%	6.6%	6.6%	5%

GASTRO-INTESTINAL

	Ether	Ethylene	Cyclopropane	Nitrous Oxide	Spinal
Nausea Vomiting	47%	44%	29.6%	17.6%	15.3%

GENITO-URINARY

	Spinal	Cyclopropane	Nitrous Oxide	Ethylene	Ether
Retention	22%	11.1%	11.1%	7.1%	4.33%
	Nitrous Oxide	Ether	Ethylene	Spinal	Cyclopropane
Cystitis					
Nephritis	4%	4%	4%	2%	2%
Hematuria					

CENTRAL NERVOUS SYSTEM

	Spinal	Cyclopropane	Ether	Ethylene	Nitrous Oxide
Headaches	4%	2.66%	2.66%	2.3%	1.32%
	Cyclopropane	Nitrous Oxide	Ethylene	Ether	Spinal
Total Cases					
No Complications	168	143	48	107	57
Percentage					
No Complications					
Total Cases	56%	47.7%	37%	35.7%	19%

The deaths which occurred in this series of cases are grouped according to cause and the anaesthetic administered

	Cyclopropane	Ethylene	Nitrous Oxide	Spinal	Ether
Toxemia	3	2	1	8	7
Malignancy	1		2	3	4
Hemorrhage			3	2	2
Shock		1	3	1	1
Embolus or					
Thrombus	2	1	1	1	2
Other Circulatory					
Diseases		1	1		1
Pneumonia	2		1		
Other Respiratory					
Causes		1	1	5	
Total	8	6	13	20	17
Time of Occurrence—					
	Cyclopropane	Ethylene	Nitrous Oxide	Spinal	Ether
First 12 hours.....	1		2		3
First 24 hours.....	1		3	2	2
First 48 hours.....		2	1		1
First 72 hours.....			1	2	1
Later	6	4	6	12	10

Of the deaths occurring in those cases which had had cyclopropane, none could be attributed to the anaesthetic.

There were two cases of pneumonia, both hypostatic in type—one occurring five days post-operative in a diabetic, and the other thirteen days post-operatively in a patient with carcinoma of the stomach.

Rheumatic Heart Disease in Children*

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TULSA

When the pediatrician thinks of heart disease he thinks first and foremost of rheumatism. This disease contributes from eighty to ninety per cent of all the organic heart ailments of childhood. It must be thought of, not as a disease of the heart, but as a generalized systemic infection, chronic in nature, characterized by periods of quiescence and exacerbations, but exerting its most serious and ravaging effects on the heart.

INCIDENCE

Rheumatism, at least as far as the initial attack is concerned, is essentially a disease of childhood, and therefore to the pediatrician belongs the chief responsibility in caring for the patient during that all-important stage when the heart may be protected or damaged depending upon the care it receives. The age incidence curve of rheumatic fever begins in the intra-uterine period. Several cases have been reported where babies born of rheumatic mothers, have had rheumatic heart disease at birth. The most authentic of these was reported by Kissane and Koons.¹ In their case the mother had had attacks of recurrent rheumatic fever since the age of twelve. At the age of twenty she had been told that she had rheumatic heart disease. At the age of twenty-five she had rheumatic fever throughout her second pregnancy and the child was born with red, swollen, painful (on motion) joints. Abnormal sounds were heard over the heart immediately after birth and the child was noticeably short of breath. However, he lived until the age of nine. An autopsy revealed a severe pancarditis with involvement of all the valves and a fully developed button-hole mitral stenosis. However, such experiences are rare and only three per cent² of rheumatic childhood infections occur before the age of two. The curve rises gradually until the age of

three, and then sharply, reaching a maximum at the age of ten, after which it declines rapidly until the post-pubertal period is reached. The period of greatest incidence is from six to twelve.

The incidence seems to be about equal in the two sexes.

Most observers agree that there is a definite familial tendency to the disease but whether this is based on the inheritance of a susceptible constitution, to similar environmental factors, or to contagion, is not clear.

The disease affects all social classes but is more prevalent in the lower economic strata. This difference is apparently more marked in England than it is in this country. Paul *et al*³ in a study of school children in New Haven, Connecticut, found that it was fifty per cent more prevalent in the children in the poorer school districts than among the better. In the "poor" public school districts the incidence was forty-eight per thousand; in the "better" public school districts the rate was thirty-two per thousand; while in the small private schools the rate was only six per thousand. In a similar study of 7,914 undergraduate students at Yale University Paul and Leddy⁴ found that the incidence was 8.2 per thousand contrasted with fifteen per thousand which is the average obtained from statistics of comparable age groups of individuals in other walks of life. They also found that of the Yale students the incidence was 12.5 per thousand for high school graduates in contrast to 5.8 per thousand for private school graduates.

Figures on racial incidence are unreliable because they are confused by geographical and economic differences. However, it seems that the American Negro is less susceptible to rheumatic disease than is the white man.

The geographical incidence of rheumatic fever is of particular interest to many of us in Oklahoma who have attended medi-

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cal school and received our hospital training in the north. Rheumatism prefers the colder temperate climate. Heat and a low humidity are its worst enemies. It is extremely prevalent in England. It is almost absent in some sections of the tropics. It is most common in this country, in New England and along the Great Lakes. It is comparatively uncommon in the South and Southwest. I rarely see a case where the initial infection was contracted in or south of Oklahoma. White of Boston states that approximately thirty-six per cent of organic heart disease is rheumatic. Stone and Vanzant of Galveston give 7.3 per cent. At the Charity Hospital in New Orleans rheumatic heart disease comprises about ten per cent of the organic heart diseases.⁵ Thus it would appear that rheumatic heart disease occurs only one-fifth to one-third as frequently in the South as it does in New England.

ETIOLOGY

We have every right to assume that the rheumatic syndrome is an infectious disease and yet bacteriological studies so far have proven very disappointing. It is generally believed that it is a streptococcal infection, and yet we have very little sound scientific evidence to support this contention. Nearly everyone working with these conditions has occasionally isolated streptococci from the blood stream; however, the streptococci vary widely in character and their relationship to the disease is very questionable. Rheumatic exudates are characteristically sterile and tissue sections do not show the presence of bacteria. Allergy has been called upon to explain the local tissue manifestations. European investigators have attempted to relate the disease to tuberculosis and Lowenstein claimed to be able to isolate tubercle bacilli from the blood stream. It has been found that the sera of patients with rheumatic fever show a higher agglutination titer against streptococci than do normal sera. It has been found that during a rheumatic exacerbation streptococci are found in the throats in great abundance. However, this evidence is all inferential rather than direct and the primary etiology still remains unsolved.

Of the predisposing causes we have climate, familial tendencies, repeated upper respiratory infections, and economic

status—which in turn covers food, clothing, shelter, medical attention, over-crowding, etc.

Scarlet fever is generally thought to cause heart disease either identical with or indistinguishable from rheumatic heart disease.

SYMPTOMATOLOGY AND PATHOLOGY

Rheumatism is a constitutional disease which is important because of its effect on the heart. Kaiser² in a study of 1200 rheumatic children found the heart to be involved in sixty-four per cent. In thirty-nine per cent a definite arthritis was present; in thirty-two per cent mild joint pains occurred. Adding these last figures, seventy-one per cent showed some form of joint involvement. Chorea was noted in twenty-nine per cent. Muscular or "growing pains" were found in eighteen per cent. Rheumatic pneumonia occurred in 2.8 per cent, erythema nodosum in 1.9 per cent, rheumatic nodules in 1.3 per cent, rheumatic pleurisy in 1.1 per cent, and purpura in 0.4 per cent. Of the minor symptoms, fever, sore throat and tonsillitis, fatigue, anorexia, pallor, epistaxis, headache, abdominal pain, heart pain, and nausea are the more important.

The heart involvement is usually a pancarditis—that is, the endocardium, the myocardium, and the pericardium are all involved. The younger the patient the more severe and generalized the cardiac process is apt to be. One or all valves may be involved. The mitral valve is most commonly affected, the aortic next, and the right sided valves with considerably less frequency. The lesions usually present both stenosis and insufficiency, although the stenosis is usually not apt to be recognized clinically until the process is relatively advanced. In mitral disease a systolic murmur develops early, frequently replaces the first sound, and is heard best at the apex. As the stenosis becomes advanced a diastolic and presystolic murmur appears. In aortic disease the diastolic murmur is heard relatively early because the insufficiency is the earliest functional development and it is only when the process is advanced that the systolic thrill and the murmur of aortic stenosis appear. A pulsating liver, jaundice, cyanosis, and at times distended and pulsating neck veins

are indicative of tricuspid disease. The pericarditis may be dry or with an effusion. A pericardial friction rub may be present in either variety. An effusion may have to be tapped if tamponade develops. At times the effusion may be so large as to compress the left lower lobe of the lung and simulate pneumonia. Pericarditis may be followed by Pick's syndrome. The myocarditis may be of any degree of severity and upon it plus the severity of the generalized infection depends the immediate outcome. The mechanical embarrassment due to the distortion of the valves is of importance only as time goes on.

The joint symptoms vary from mild aches and pains to severe multiple arthritis with effusion, pain, swelling, and fever. I have seen cases where nearly every joint in the body was involved and when the slightest motion meant excruciating pain. In the great majority of instances the joints clear up without any residue. Occasionally in the chronic or recurrent form it seems to gradually merge into a condition indistinguishable from a rheumatoid arthritis.

Chorea is another classical manifestation of the rheumatic syndrome. Some writers regard Sydenham's chorea as always a rheumatic manifestation. Schwarz⁶ states that in a series of twenty-three cases of "pure" Sydenham's chorea, unassociated with any other rheumatic state, observed for seven years or longer, heart disease followed in one hundred per cent. Most authors believe that heart involvement is much less commonly associated with chorea than with the arthritis; in fact, some believe that not all cases of chorea are due to rheumatism. However, when heart disease is associated with chorea it is likely to have a slow insidious onset and to be less severe than when it is associated with arthritis.

Rheumatic arthritis and chorea are the classical examples, the things we find in text books; if present they make the diagnosis very simple. Unfortunately, and this is especially true in the southern portion of this country, we are often forced to rely on less definite findings. We may have a vaguely ill child, not very sick and yet not well, perhaps a low grade fever which may easily be missed if the tem-

perature has not been taken at regular intervals, he is somewhat pale and listless, the appetite is poor, there is some headache, vague abdominal pain possibly with some nausea and vomiting, and he has lost weight or possibly only failed to gain normally. Such a train of symptoms should make us suspect rheumatism as a possible cause. Tuberculosis is often erroneously diagnosed. Fever of unknown origin lasting more than a few days more often means rheumatism than any other single disease.

It is at this point that the systolic murmur becomes important. As soon as we suspect rheumatic disease we listen carefully for an apical systolic murmur and if we hear one we are usually convinced that the child has heart disease, although we know, or should know, that many children have such a murmur or will develop one in the presence of fever or a nervous tachycardia. Untold numbers of people have been consigned to a life of semi-invalidism unnecessarily because of a functional systolic murmur. A good general rule is never to make a diagnosis of heart disease because of a systolic murmur if one were unable to make the diagnosis if the murmur was not there. There are exceptions, of course. Experience will aid one to recognize a murmur that has an "organic" sound to it. Often one can watch the development of a murmur disassociated from other factors which would tend to bring out or increase a functional murmur.

The electrocardiogram is of importance in that it often gives us the first evidence of cardiac involvement. The changes shown cover practically the entire range of electrocardiographic abnormalities. Some of the more common findings are sinus tachycardia, S-A block, premature contractions, auricular fibrillation, slurring of QRS complex, A-V block, bundle branch block, and changes in axis deviation.^{7 8}

MANAGEMENT

In the treatment of rheumatic disease we are concerned almost exclusively with the actual or potential danger to the heart. For purposes of treatment rheumatism may conveniently be divided into three phases: (1) Rheumatic infection be-

fore the heart has been involved, (2) active rheumatic infection of the heart, and (3) permanent impairment of cardiac function due to cicatricial changes.

In the presence of rheumatic infection but without heart involvement we are concerned primarily in the prevention of cardiac disease. Here rest is of prime importance. It should be absolute bed rest. It should continue for at least two weeks after all evidences of activity have disappeared. Then the resumption of activity should be very gradual and the patient kept under the closest observation for any recrudescence. What are our criteria for quiescence or "arrest"? The temperature must be normal. The leucocyte count must be within normal limits. However, infection may be present even if the white count is normal. The neutrophil percentage and the Schilling count are more delicate and therefore more helpful. Serial counts are of more value than single ones. The sedimentation rate is perhaps the most useful single laboratory procedure. Obviously all subjective and objective manifestations must have disappeared. Special symptoms must be treated as they arise. Salicylates are extremely useful in controlling the joint signs and fever. Restlessness and irritability must be controlled with sedatives. Sedatives must be used to control the symptoms of chorea. The patient should have a normal, well-balanced diet with an adequate vitamin intake.⁹ Obvious foci of infection, especially about the upper respiratory passages, should be attended to. However, this does not mean the indiscriminate removal of tonsils.^{10 11} Kaiser concludes that the initial attack of rheumatic infection occurs one-third less frequently in tonsillectomized children than in the control group. On the other hand, once a child has become infected with the rheumatic virus, tonsillectomy does not lessen recurrences nor mitigate the severity of the process. Perhaps next in importance to rest is the removal of the patient, when possible, to a warm, dry climate.

If an active infection of the heart is already present the above outlined treatment must be even more rigorously carried out. The period of rest must be extended—usually to at least six months,

and often more as circumstances demand. Here the pulse rate is an added factor that must be carefully watched, and as long as the rate remains above normal it must be assumed that infection is still present. Even after the resting pulse rate has returned to normal its response to exertion must also be within normal limits. Treatment with a streptococcus vaccine was tried with some favorable results.^{12 13 14} This led to the use of typhoid vaccine for non-specific therapy. More recently fever therapy has been added as an apparently valuable aid in the treatment of rheumatism both with and without carditis. Digitalis at this stage is of little value unless fibrillation is present.

In the third stage we are dealing with fully developed heart disease the sequelae of the active infection. In the endocardium we have stenoses and insufficiencies, in the myocardium we have scar tissue between and even replacing the muscle fibers, in the pericardium we have adhesions—all these are scars which follow the healing process of the preceding acute infection. The treatment is that of heart disease in general. The majority of this group are seen by the internist rather than the pediatrician.

COURSE AND PROGNOSIS

The initial infection of the rheumatic state occurs principally in childhood. About one-half of one per cent of the school population are affected by it. Of this number sixty-four per cent develop heart disease. The average age at which the primary rheumatic infection was acquired is seven years. According to Stroud at the end of ten years forty per cent are either dead or totally disabled.¹⁵ Kaiser,² however, found that only 8.2 per cent were dead at the end of ten years. Davis and Weiss¹⁶ state that five per cent of all deaths due to rheumatic heart disease occur in the 0-9 age period, and twenty per cent in the 10-19 age period. Morse,¹⁷ in a follow-up study of one hundred children seen during their first attack of "endocarditis" ten to thirty years previously, found that thirty-six were dead, three were cardiac invalids, and sixty-one were normal, alive and well. Of the sixty-one, thirty-seven had apparently normal hearts.

He stated that in a large proportion of the fatal cases, death occurred early.

SUMMARY

1. Rheumatic fever is a chronic infectious disease of unknown etiology most prevalent in the colder temperate climate, occurring most frequently among the lower economic class, and producing its most serious effects upon the heart.
2. The relationship between rheumatic fever and the streptococci is highly suggestive but still unproven.
3. Prophylactic measures are limited to general hygienic measures, change of climate, and possibly tonsillectomy if done prior to the onset of the disease.
4. Actual treatment still remains largely symptomatic and rest is the most important factor of all. Fever therapy is a promising addition to the older methods of treatment.
5. The mortality rate is still very high.

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Congenital Bony Temporomandibular Ankylosis and Facial Hemiatrophy

Lester W. Burket, New Haven, Conn. (Journal A. M. A., May 16, 1936), believes that a bony ankylosis of the temporomandibular joint occurring in the new-born is of sufficient rarity to warrant a report. The patient, a full term spontaneously delivered male infant, showed true congenital bony ankylosis in the region of the left temporomandibular joint and alveolar ridges associated with maxillary and mandibular hemiatrophy. Labor was not abnormal, but a moderate hydramnios was present. Undoubted evidence of a typical Horner's syndrome was observed. Lysis of the fibrous and bony fixations was performed twenty-four hours after birth, which permitted fairly normal mandibular movements. Bony ankylosis recurred in two months; however, a sufficient anterior aperture remained to permit adequate feeding. It is possible that reankylosis could have been prevented by the insertion of a fascial or muscular slip between the bony fragments. Ankylosis occurring in the first few years of life, provided sufficient nourishment can be obtained, is best treated after six years of age, at which time the cooperation of the patient, so essential to a satisfactory functional result, can be perhaps secured. Moreover, the first permanent molars are usually erupted at this time, enabling the placing of an orthodontic appliance to stimulate development of the small mandible. Reeducation of speech may be necessary, but this is usually accomplished within two months after operation, provided no other abnormality is present.

Clinical Observations With Insulin Protamine Compound

Randall G. Sprague, Benjamin B. Blum, A. E. Osterberg, Edwin J. Kepler and Russell M. Wilder, Rochester, Minn. (Journal A. M. A., May 16, 1936), find that the immediate effect of insulin-P (insulin protamine compound) is much less than that of insulin-R (regular insulin). When the former is used alone, and given as a single dose before breakfast, the meals of the first few days provoke glycosuria, but when the dose is properly adjusted the level of the blood sugar on successive mornings decreases progressively and the elevating effect of meals diminishes until, by the end of from four to six days, a normal level of blood sugar may be attained even in cases of severest diabetes. Supplementing insulin-P with small doses of insulin-R will shorten the period of containing control. Insulin-R should not be mixed in the same syringe or injected into the same site with insulin-P. It has not been necessary to continue the supplementary use of insulin-R after the first few days in the milder cases, but probably in many cases such supplementary use of insulin-R will be desirable, especially in emergencies. Until more experience has been obtained it would appear that insulin-R will be the insulin of choice when quick action is desirable, as in the treatment of acidosis. Although insulin-P, in many cases, makes possible effective management of diabetes with only one administration of insulin a day, and with less insistence on rigid control of the diet, its careless use or disregard of the diet is attended with danger.

Glossodynia

According to Sherman F. Gilpin, Rochester, Minn. (Journal A. M. A., May 16, 1936), a search of the records of the Mayo Clinic reveals only forty-eight cases of glossodynia. An attempt has been made to determine, if possible, some of the factors in its etiology and the means by which some patients have obtained relief, as well as any other information pertinent to the problem. As others have found, the majority of the sufferers (thirty-seven) were women. The average age of the whole group was 54.3 years. The ages of the male patients varied between twenty-seven and seventy-three years, and the ages of the female patients varied between twenty and seventy-two years. Only ten of the patients gave a history of migraine. Only five patients could reasonably be classified as being depressed; nevertheless, the incidence of mental depression is higher among those who suffer from glossodynia than it is among the general population. In eleven cases there was evidence of arteriosclerosis of the central nervous system. Here again, therefore, is another possible factor in the production of glossodynia. In the sixteen cases in which gastric analysis was performed, the values for the gastric acidity were normal. In five other cases the values for the free hydrochloric acid in the stomach varied from eight to sixteen. Anacidity was present in only three cases, and in only one of these cases was there any anemia whatever. Cancerphobia has been indicted by one writer as the cause of glossodynia. Only eight patients expressed this fear, which in some cases amounted to a phobia, and it is difficult to determine whether this fear or the burning came first; a few seemingly had acquired the burning first. Most patients whose tongue, palate or mucous membranes are the seat of a burning discomfort have, of course, had their teeth examined. As so often happens in other conditions, doctors and dentists advise extraction rather frequently on empirical grounds in these cases. Consequently, it was not surprising that of the forty-eight patients in this series twenty had lost all or many of their teeth. Thirty-seven of the forty-eight patients complained of various functional disorders, in addition to the glossodynia. It is assumed and maintained, although with not too great certainty, that thirty-seven of the group were psychoneurotic individuals whose many and varied symptoms classified them as such from the outset. These other neurotic symptoms included burning of the legs, continuous headache, a drawing sensation from the stomach to the rectum, continuous pain in the cheek, generalized aching of long duration, burning in the vagina and rectum, a feeling as of a lump in the throat, discomfort in one apparently normal tonsil, and the taste of pus in the throat. Gastro-intestinal symptoms, presumably functional, also should be mentioned with this group. Perhaps one of the best evidences of the fact that glossodynia is a psychoneurotic manifestation is the way in which some of the patients report they received relief from their distress following psychotherapy. Through subsequent visits to the clinic or letters of inquiry, it was possible to learn further about the course of the disease in twenty-five cases. Of the twenty-five cases, complete recovery was reported in eight. Five other patients felt that they were somewhat better than they had been. Three others had found that they had discovered the cause of their discomfort. In nine of the twenty-five the condition was either worse or not better. In none of these cases were there found any local or general positive physical manifestations except for an occasional bad tooth and achlorhydria, which was

present in three cases. The burning in this series involved the tongue and the mucous membrane of the mouth, cheek, lips, pharynx, palate and even of the nose. The discomfort included not only burning but such sensations as a metallic or bitter taste in the mouth, prickling, sticking, an acid taste, and a feeling as if a hot iron had been placed on the part affected.

Twenty-five-Year Old Error in Measuring a Giant

Charles D. Humbert, Barnard, Mo. (Journal A. M. A., May 16, 1936), is convinced that Cushing's measurements of John Turner (8 feet 3 inches) was in error by at least one foot, perhaps more, for the reasons which follow. Cushing's text presents two good full length photographs of the nude and barefooted giant. An inspection shows that this patient's elongation was quite apparently that of the infantilism-eunuchoid, nonacromegalic type. To one who has studied circus giants and applied a tapeline to them it is evident from these photographs that Turner, though he was huge, was far short of eight feet in height. In the write up of the physical examination the doctor states that "his height is estimated at about eight feet." It is known that the eye always overestimates the exact height of giants—exhibition giants take advantage of the public's credulity, for it is axiomatic that no giant (or no dwarf) ever told the truth about his dimensions! The majority of them, too, customarily do a bit of tinsel falsifying anent the number and the size of their immediate relatives. When the photograph of Turner is studied carefully it will be noted that the giant is stooped, though his head is erect. If a pair of dividers is used to take off the dimensions in this photograph, and the points of the instruments are then measured against a scale, the result will be approximately seven feet three inches. If a man of eight feet three inches bows himself over until his height is lowered to six feet five inches, as is Turner in one of Cushing's photographs of him, he would appear very much more stooped than the photograph shows. A quick test of such a stoop will show at once that Turner has not bent himself to any such extent, for it puts one's spine quite nearly horizontal.

Self-Performed Operations

John G. Frost and Chester C. Guy, Chicago (Journal A. M. A., May 16, 1936), review the recorded cases of autosurgery which fall into one of four major groups: (1) surgeons who have operated on themselves, (2) normal minded individuals who have been forced by severe pain or in the absence of medical attention to perform autosurgery, (3) the sexual pervers and those suffering from an acute psychosis, intense sexual excitement, or anger resulting in self-inflicted mutilations or amputations, usually of the genitalia and (4) those who, because of utter ignorance or feeble-mindedness, have attempted the surgical correction of some obvious disease or abnormality. A case (group 4) of major autosurgery, twice performed with eventual recovery is reported. The patient's self-performed operations were undertaken for what seemed, to his simple mind, to be good reasons, castration and the resection of a loop of jejunum 11.5 cm. in length, the former was performed without any medical attention and the latter with surgical anastomosis eleven hours after the injury. Comments and diagnoses by the attending staff of the Psychopathic Hospital on the patient were that he was a mental defective but not committable.

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McAlester, Oklahoma

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EDITORIAL

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The above appears to be sufficient reason for patronizing our advertisers and it might be well to carry out the suggestion that you ask the "detail" man if his product is Council Approved.

ANNUAL MEETING OF THE AMERICAN MEDICAL ASSOCIATION

Your Editor has just returned from Kansas City where he attended the Annual Meeting of the American Medical Association and with seven thousand other doctors enjoyed a most pleasant and profitable meeting. Kansas City hotel facilities were practically exhausted; however, everyone appeared to be comfortably cared for.

This meeting was the first to be held in the new Kansas City Auditorium where

every facility was present for the technical and scientific exhibits as well as for the meetings of the various sections.

It was with deep regret that the members of the American Medical Association heard of the serious condition of Dr. J. Tate Mason and his inability to be present at his inauguration. However, he was inaugurated though *absent pour cause de serieuse indisposition*, and this ceremony paid to Dr. Mason the tribute which the House of Delegates had elected him to receive a year ago, even though a note of sadness prevailed.

Many prominent doctors and laymen appeared upon the general program but the one probably most enthusiastically received was Governor Alf Landon of Kansas, who in his address thoroughly endorsed the attitude of the American Medical Association toward regimentation in medicine.

You will of course receive, through the columns of the Journal, the report of your Delegates who were very attentive at all meetings of the House of Delegates and actively participated in its deliberations.

In all, the 1936 meeting of the A. M. A. rivaled all preceding meetings in attendance and interest.

Editorial Notes—Personal and General

NINE APPOINTMENTS MADE

Nine new appointments were made to the clinical staff of University Hospital. They include Dr. Emil G. Reed, Dr. George Kimball, Dr. Jesse D. Herrmann, Dr. Clifford Fulton, Dr. John Powers Wolff and Dr. Gregory Stanbro, assistant in surgery; Dr. LeRoy D. Long, Jr., associate in surgery, and Dr. Robert L. Noel and Dr. Howard Shrobe, instructors in orthopedic surgery.

Dr. Joseph B. Goldsmith was promoted from assistant to associate professor of histology and embryology on the medical school staff:

On the recommendation of Dr. Robert U. Patterson, dean of the school, the regents voted to limit the age of members of the hospital staff to sixty-five years, effective in 1937.

DR. and MRS. W. J. WHITAKER, Pryor, are visiting in New Orleans, where Dr. Whitaker will attend the Turo Infirmary.

DR. J. C. BUSHYHEAD, Claremore, is reported much improved after suffering a light stroke a few days ago.

DR. W. ALBERT COOK, Tulsa, gave a paper on

EYE INJURIES at a meeting of the Creek County Medical Society, May 7th.

DR. J. B. CARMICHAEL, Duncan, has been appointed as County Health Superintendent of Stephens County, effective May 26, to fill the vacancy caused by Dr. D. Long's death.

News of the County Medical Societies

On May 27th, Dr. J. A. Walker, Councilor for the Seventh District called a meeting of the societies in his district at Shawnee. Dinner was served at the Aldridge Hotel after which proposed legislation was discussed by Drs. Speed, Willour, and Geo. R. Osborn.

Following these addresses the forty members present entered into general discussion of our legislative problems from which much good was derived and many pertinent suggestions made.

It was reported at this time that several counties throughout the state had made definite arrangements to meet their quota of the allotment for expense of the legislative program.

RESOLUTIONS

DOCTOR D. LONG

At a called meeting of the Council of the Oklahoma State Medical Association May 24, 1936, the following resolution was presented and unanimously adopted:

"WHEREAS, this Council has received the sad information of the death of Dr. D. Long of Duncan, Oklahoma, and

"WHEREAS, Dr. Long, for many years, has been a member of this Board of the State Medical Association and rendered through it and in many other ways most valuable service to organized medicine in Oklahoma, and

"WHEREAS, he has been recognized among the doctors of the state as one of the most beloved members of the medical profession,

"THEREFORE BE IT RESOLVED, that we receive this information with deep sorrow, realizing our loss in no longer having the benefit of his counsel and advice, and

"BE IT RESOLVED, that we extend to the family our deepest sympathy and assure them of our sincere desire to share with them this burden of loss, and

"BE IT FURTHER RESOLVED, that a copy of this resolution be made a part of the minutes of this meeting, that it be published in the Journal of the Oklahoma State Medical Association, and that a copy be sent to the family and to the press of his home city."

DOCTOR J. P. BISHOP

WHEREAS, it is with deep regret that we learn of the death of our friend and fellow in medicine, Dr. J. P. Bishop, of Aline, Oklahoma, who has recently gone to his reward, and

WHEREAS, the Woods-Alfalfa County Medical Society has lost a member who has been a faithful attendant and worker for many years, and

WHEREAS, he has practiced in the Aline community for many years and has always been active

in the practice of medicine and strictly adherent to the principles of medical ethics, and

WHEREAS, he will always be remembered as a man of high professional stand, high morals, and square dealing, with a warm heart for the poor and those in need of medical service, therefore

BE IT RESOLVED, that the Woods-Alfalfa County Medical Society in its regular session in Cherokee Tuesday, May 26, 1936, expresses its sincere regrets in the loss of its fellow worker and friend and extends its heartfelt sympathy to his bereaved family, and

FURTHER BE IT RESOLVED, that a copy of these resolutions be sent to the bereaved family and a copy be tendered the local paper, and the Journal of the State Medical Association.

L. T. Lancaster,
M. G. Dunnington,
O. E. Templin,
Committee.

Popliteal Aneurysm

Arthur H. Wells, Duluth, Minn.; Clay E. Coburn and M. A. Walker, Kansas City, Kan. (Journal A. M. A., April 11, 1936), believe that it is not generally known that, with the exception of aneurysms of the aorta, popliteal aneurysms are found more frequently than those of any other artery. According to Matas, they are by far the most frequent of the surgical and operable types of the disease. Because of this frequency, their characteristic rapid progression and the efficacy of proper surgical intervention, the authors give a brief review of the subject and present a case illustrating tragic characteristics of the disease. The relative frequency of popliteal aneurysms, their often rapid progression, the disastrous gangrene in unaided cases and the efficacy of proper management makes this an important subject for every physician who is likely to encounter the condition.

OBITUARIES

DOCTOR HOWARD ALONZO WAGNER

Howard Alonzo Wagner was born at Bath, Pa., October 4, 1875, and died at his home "The Oaks" in Shawnee, Oklahoma, on April 26, 1936, of coronary thrombosis. Dr. Wagner was a bachelor. He leaves seven brothers, all living near Bath, Pa.

He was graduated from the University of the South at Sewanee, Tenn., with the degree of Doctor of Medicine in 1901 and came to Shawnee, Okla., immediately after graduation and had practiced continuously in this city until his death, doing a general practice, with special attention to urology.

Early in the War he volunteered and spent twenty-one months with the American Expeditionary Forces in France and Germany. He was discharged as a Major in the Medical Corps.

He was a member of the Pottawatomie County Medical Society, the Oklahoma State Medical Association, and American Medical Association. He was a member of Shawnee Lodge No. 107 A. F. & A. M., Order of the Eastern Star, Indian Consistory at McAlester, Okla., India Temple of Oklahoma City, and was a thirty-third degree honorary Mason. He held many high offices in the various Masonic bodies. He was also a member of the Elks lodge and the American Legion.

Dr. Wagner devoted his time, his energies, and his funds to the youth of the city and state, helping many young men through school and college. His heart was open to all worthy youths who wanted an education. For twenty-four years he had been interested in the Masonic Home for Orphans at Guthrie, Okla., bringing cheer and happiness with his annual Easter party to the children there. The DeMolay, the high school athletic teams, and the various organizations of young men in the city were all his boys and he helped them in every way. His home, "The Oaks," was open to any worthy organization for their parties and picnics and was a second

home to all his friends. Although a bachelor, he probably had the largest "family" in the state as every one who knew him loved and respected him.

Interment was in the Shawnee Mausoleum, Fairview Cemetery, Shawnee, Okla.

DOCTOR JAMES CLINTON HAWKINS

Dr. J. C. Hawkins, fifty-two-year old Blackwell physician, died May 15th, following an automobile accident in Missouri, when he swerved his car from the road to avoid hitting a truck. Mrs. Hawkins was seriously injured but will recover.

Dr. Hawkins was born at Brumley, Mo., February 18, 1884, and was a graduate of the Washington University Medical School at St. Louis. He came to Blackwell in 1917 where he has practiced until the time of his death. He served as president of Kay County Medical Society, Blackwell Rotary Club, and Blackwell Country Club. Served in the World War and was a lieutenant-colonel in the Medical Reserve Corps at the time of his death.

Dr. and Mrs. Hawkins were returning from the meeting of the American Medical Association in Kansas City when the accident occurred.

Dr. Hawkins is survived by his wife and several brothers and sisters.

Interment was in Blackwell.

ADDITIONAL DEATHS

(Insufficient data available for obituary.)

Dr. Joseph Patterson Bishop, Aline, Oklahoma, May 13, 1936.

Dr. Reuben Taylor Harrod, Oktaha, Oklahoma, May 19, 1936.

Dr. Dock Long, Duncan, Oklahoma, May 21, 1936.

Dr. John Sinclair Miller, Hugo, Oklahoma, May 4, 1936.

Dr. John W. Sosbee, Stroud, Oklahoma, May 20, 1936.

ABSTRACTS : REVIEWS : COMMENTS and CORRESPONDENCE

EYE, EAR, NOSE AND THROAT

Edited by Marvin D. Henley, M.D.
911 Medical Arts Building, Tulsa

Contact Glasses, the Invisible Spectacles. Joseph Dallos, M.D., Budapest, Hungary. *Archives of Ophthalmology*, April, 1936.

In 1827, Herschel, the English physicist, explained the theory of the "invisible" eye glasses and approximately fifty years later three German scientists also advocated their usage.

To obtain a clear vision the eyeball must be healthy. Astigmatism, congenital or resulting from an operation may be corrected with the invisible eyeglass. Poor sight, caused by injuries or scarred healings of diseased corneas cannot be aided by regularly ground eyeglasses. The cornea cannot be perfectly smoothed and its removal and the insertion of a new one is very hazardous. Experiments of Fisk, in collaboration with the late Professor Abbe, are described and the results considered favorable.

August Muller, a young medical student was not so optimistic. He discussed the superiority of the curved lenses over the simply ground ones, which fact is considered in that light today. The disadvantages of securing perfect vision with spectacles is discussed, including inability to participate in sports, necessity of becoming accustomed to exceedingly strong lenses, the distortion of objects, etc.

About this time a third German, F. A. Muller, maker of artificial eyes, made a protective shell for a sixty-year old man, blind in one eye, and whose eyelids of the other eye were destroyed by cancer. In place of the painted iris, Muller blew a center that was thin and transparent and the patient wore this for over twenty years. Consequently it became known and more shells were made—and these more perfect—to the extent that the patients who followed were able to wear them all day without discomfort.

However, ophthalmologists for various reasons did not accept the invisible eyeglasses as the approved method in aiding impaired vision.

Until 1930 the idea was carried out that the shells could not be worn except in special cases, due to limited optical correction and that ground glasses were the reverse, and could not be prescribed for practical use.

Many tried to combine the advantages of the two but this was impossible, so it became necessary to perfect the ground shells, which was undertaken by the Zeiss factory.

Since 1930 many experiments have been carried out with the Zeiss type of ground contact glasses. The results have been highly praised by the laity as well as the ophthalmologist, although the latter should not wholly trust the patients word but should depend on further proof.

It necessitates a very great number of bowls to

find a perfect fit and even in the University of Kiel where there are over three hundred types (\$10,000.00), only a small percentage can be fitted.

The difficulty in giving satisfaction is easily understood. The eyeball must not be injured and it must be taken into consideration that it is not a perfect sphere.

In 1932 the author found Poller's negocoll, a material out of which a cast of the eye could be made. This takes only a few seconds and is not particularly painful. Further successful experiments were made by the Ophthalmologic Clinic No. I.

At the present time shells are not selected at random but are fitted with great care and precision. The lenses can be worn all day with perhaps a short rest at midday and then removed at night. The removal or insertion is comparatively easy, the care of the shell is simple and replacement, if broken, is easily made.

Thyroxine in the Treatment of Otosclerosis. Dr. Max Goldstein, St. Louis. *The Laryngoscope*, February, 1936.

Reference is made to the paper of Dr. Albert A. Gray, which was presented to the Section of Otolology of the Royal Society of Medicine, on May 3, 1935. The paper was entitled "Treatment of Otosclerosis and Similar Types of Deafness by the Local Application of Thyroxine." Fourteen cases were reported, seven of which showed quite a degree of improvement. Improvement consisted of reduction of tinnitus, recurrence of cerumen secretion and actual improvement in hearing.

The same summer Dr. Goldstein visited Dr. Gray at the Ferens Institute, Middlesex Hospital, London, and saw him apply the technique described, in three cases. Although the technique is carefully described in Dr. Gray's publication the author thinks emphasis should be laid on such points as the anaesthesia and puncture of the ear drum, the preparation of the tabloid for injection through the ear drum, and the measurement of sound capacity before and after treatment.

Dr. Goldstein remarks that in his forty years of otologic practice he has never succeeded in securing a complete and safe anaesthesia of the drum membrane. He recounts that in using cocaine in aniline oil once to relieve pain in a case of acute otitis, aniline poisoning followed. Dr. Gray uses for his anaesthesia ten per cent cocaine in aniline oil, but five minutes after instillation, he wipes the canal dry with pledgets of cotton and so removes the possibility of aniline poisoning. The fineness of the pulverization of the tabloid thyroxine, which is held in suspension by mixing with four mm. of distilled water on a sterile watch glass, is one of the essential points in the success of the injection through a fine calibered needle into the middle ear. The point at which the drum membrane is punctured should be half way between the end of the malleus handle and the periphery of the drum membrane in the posterior inferior quadrant. The point of the needle should not touch the bony lip of the round window. In order that the injection

fluid does not escape by way of the Eustachian tube, the patient's head is bent far backward and the mouth opened for about five minutes immediately after the injection.

Difficulty is noted in regard to securing in the United States the tabloid thyroxine which is used by Gray. In making sound estimates before and after treatment, Gray uses the tuning forks, the watch, and conversational and whispered voice. The author uses in addition, the audiometer. He reports four selected cases which tend to confirm the findings and results as obtained by Gray.

Otosclerotics under forty years of age whose hearing is not so deteriorated that comparative tests are difficult, offer the best field for favorable results, according to Gray. If the hearing is improved, it appears to be permanent. If the treatment is a failure, then no harm has been done. It is not a disabling procedure.

On the Genesis of Glaucoma. Barkan, Boyle and Maisler, San Francisco. The American Journal of Ophthalmology, March, 1936.

One hundred cases of glaucoma have been investigated carefully by the authors in the past two years. The examination of the angle of the anterior chamber in the living has not been possible until quite recently. Trantas, in 1907, using an ophthalmoscope with a strong inset convex lens, and making pressure at the limbus outside the point under observation, was the first to report observation of the angle. The advent of contact glass made this research much more accurate. This deflects the incoming and outgoing rays in such a manner that you are able to obtain with the ophthalmoscope a view of the most distant angle of the anterior chamber.

Fick was the first to use this method. Salzman, in 1914, using the contact glass investigated and reported on glaucoma cases. Koeppe, in 1920, using the binocular stationary microscope and the slit-lamp reported on the condition of the trabecula covering Schlemm's canal. Troncoso, in 1925, greatly stimulated research on this subject by devising the gonioscope. Thorburn, in 1927, used a contact glass and a loupe of low magnifications and studied one hundred cases of glaucoma.

The authors point out the defects in these previous methods and describe their method in detail. They used a Zeiss binocular corneal microscope and the Vogt arc slitlamp so adjusted that they obtained a highly magnified stereoscopic view of the angle of the anterior chamber throughout its entire circumference. The patient wears contact glasses at the time of the examination and is examined lying down. They found from their investigations that the angle is not of equal width throughout its circumference as has been formerly thought, but narrower above than it is below.

A frequent if not constant finding in the so-called primary glaucoma is the sclerosis and pigmentation of the trabecular part of the angle of the wall. Through the trabecula over Schlemm's canal are pigment dust and granules. Some of these cling to the surface and are likened to barnacles on the hull of a ship as they project into the aqueous. Sclerosis of the trabecula and the stopping of the pores with pigment is given as one of the causes of chronic glaucoma. In a patient with one apparently normal eye, with normal fields and tension, some pigmentary block of the trabecula and Schlemm's canal could be demonstrated, which would seem to point to the fact that pigmentary block is primary and the cause rather than secondary and the result of hypertension.

Some of the different types or stages of glau-

coma are discussed. In the compensated, simple, chronic non-inflammatory cases of glaucoma they think stoppage of the pores of the trabecula is the immediate and sole cause of the reduced outflow of the intra-ocular fluid. They think this is the first stage of chronic glaucoma. They think it is also the first stage of decompensated chronic, inflammatory glaucoma in which the iris has become adherent to the angle of the wall and produces occlusion of Schlemm's canal. According to their conclusions it is obvious then that the pigment block occurred before the iris adhesion and was the primary factor in hypertension. Another type or stage of glaucoma described is characterized by a narrowing of the entrance to the angle between the anterior-border ring of Schwalbe and the iris root. This is attributed in many cases to the general advance of the iris-lens diaphragm and in some to a ballooning (bombe) of the iris. These iris adhesions prevent the outflow of aqueous into Schlemm's canal. The classification of the primary and secondary glaucomas is discussed.

Causes for increase in violence of the disease are attributed to increase of obstruction of the filtration angle or to factors having their origin in nerves. Further reports are to be expected from these men in the near future.

Indications for Tonsillectomy Viewed from the Point of View of Otolaryngology and Internal Medicine. G. Dohlman. Abstracted by H. V. Forster from Acta Oto-Laryngologica, Vol. XX, 3-4, and Published in The Journal of Laryngology and Otology, June, 1935

The internist sees the patient during his illness and is in a position to observe the development of any complications as they arise, but the otologist who sees the patient in the quiescent stage only hears a description of the case history, and this from the patient himself.

The conception of focal infection has enlarged the field of indications for operations and a certain confusion exists as to the desirability of doing them.

When we carry out tonsillectomy because of repeated acute attacks or for complications in the joints, heart, kidneys, etc., which have followed these attacks of acute tonsillitis, we have definite theoretical and practical indications for interference; and when we examine such tonsils microscopically we find certain signs suggestive of inflammatory change, but we can hardly say what anatomico-pathological state will justify a diagnosis of chronic tonsillitis or indicate that localized complications or a general toxic absorption would take place.

As there is, on microscopical examination, nothing to distinguish with certainty the tonsil of a healthy person from that of a patient subject to repeated acute attacks accompanied by repeated attacks of polyarthritis or any other complication, we are forced to draw the following conclusions:

1. It is useless to rely on macroscopical signs to judge the normal or pathological tonsil when the microscope cannot decide, and when deciding on operative indications one should neglect the so-called "clinical signs" of a chronic tonsillitis-plugs, hyperplasia, etc., redness of pillars, gland troubles. These only prove past troubles or a more or less accidental irritative condition.

The writer believes, however, that we ought not to refuse to do a tonsillectomy in cases in which the history indicates clearly a relation between repeated tonsillar affections and their complications, even though we do not discover plugs of detritus in the crypts or some other equivalent

sign, because we should then waste time looking for evidence by inspection alone.

2. The second conclusion is a physiological one which Hellman has established, that there is a battle going on in the tonsils between noxious influences and a defense mechanism. Chronic tonsillitis is a normal state unknown only in those animals brought up in an environment free from bacteria.

Because of the indecisive frontier micro- and macroscopically which separates the normal from the abnormal tonsil this consideration has led to the erroneous supposition that all tonsils are unhealthy organs and ought to be removed. Another useless argument is that the same functions belong to all the other lymphoid tissue of the alimentary tract and we cannot remove it all by surgical methods.

A more legitimate conclusion would be that in the clinically diseased tonsil we have a mode of pathological reaction which is expressed by repeated acute attacks within the organ itself, and by a pathological permeability to bacteria and their toxins which can lead to a series of complications.

As this is the case it would be better to try and discover the cause of these modifications of tonsil reaction to bacteria which live in the mouth and tonsil tissue. These reactions may also depend on a local lesion of the tissues resulting from previous severe attacks of tonsillitis. In such cases we can expect a good result from tonsillectomy, but the alterations in question may also be a manifestation of lack of resistance of the organism in general, and then if we carry out a tonsillectomy the patient ceases to have anginas, but persists, nevertheless, in presenting just as often pharyngitis, rhinitis, bronchitis, etc. Both these categories of patients are no doubt well known to us all.

One could argue that it is not so much poor resistance on the part of the body as the vitality or virulence of the bacteria which are important factors, but if we consider that the sole object of bacteria is not to attack men or animals but to behave according to the nutritive medium on which they find themselves implanted we begin to appreciate the importance of the buccal secretions and the reactionary capacity of the tonsils to bacteria.

In some experiments which the writer carried out he noted, for example, how Gram-positive organisms disappeared from the bacterial flora of the mouth cavity after administration of a diet free from carbohydrates.

When certain favorable results follow the operation of tonsil removal in arthritis or chronic septic conditions there are some factors which should not to be lost sight of. Do the rest in bed and enforced starvation have in themselves a beneficial effect? We have also to remember the presence of two bare operated areas in the throat from which a vaccination process may take place.

In conclusion the writer considers that no otologist would refuse to remove the tonsil when, after a careful examination of the case, it had been decided that this organ was responsible as a source of infection for certain pathological lesions, but cases should not be submitted to him for operation on the slender pretext that certain diffuse symptoms originate from it.

The internist must develop a keen sense of responsibility and not propose a "hit or miss" policy or suggest tonsillectomy just because some other line of treatment has failed, neither should the argument be used that the operation is not a dangerous one. Such an argument would be of little use after a possible accident or fatality.

SURGERY AND GYNECOLOGY

Abstracts, Reviews and Comments from
LeRoy Long Clinic
714 Medical Arts Building, Oklahoma City

The Control of Morbidity and Mortality Following Pelvic Surgery. (A Review of a Second Series of One Thousand Consecutive Personal Cases.) By Walter T. Dannreuther. Surgery, Gynecology and Obstetrics, May, 1936, Pages 791 to 798.

In January, 1930, this author made a critical analysis of one thousand consecutive personal operative cases immediately preceding that publication with the following summary and conclusion:

"In a series of one thousand gynecological operative cases, there were complications during convalescence in seventy-nine, a morbidity of 7.9 per cent; nineteen patients died, a mortality of 1.9 per cent.

"Post-operative transfusion should never be necessary except in the presence of ectopic pregnancy, secondary hemorrhage, or sepsis.

"Pre-operative cystoscopy and renal function tests will eliminate many useless pelvic operations.

"Severe anemia, pyorrhea, respiratory affections, a compromised myocardium, arterial hypertension, and impaired metabolism, are indications for postponing operation in elective cases; spinal anesthesia may reduce the hazards in emergency cases.

"Radiation and diathermy are dangerous in the presence of active infection or necrobiosis.

"Meticulous peritonealization and burying all suture knots minimize the likelihood of post-operative intestinal obstruction.

"The incidence of pulmonary complications can be lessened by the invariable employment of a skilled anesthetist.

"Correcting indicanuria and obstinate constipation before operation will practically eliminate post-operative pyelitis.

"Persuading the patient to practice active motion of the extremities throughout convalescence is good insurance against thrombophlebitis and embolism.

"Pronounced tachycardia developing during the first half hour of anesthesia is an indication to terminate the operation as soon as possible.

"Unpreventable surgical shock will develop occasionally in profoundly septic patients.

"Patients with a high metabolic rate should not be subjected to radiation."

Since the publication of this series which he designates as Series A, he has collected another group of one thousand personal cases, identified as Series B, and is now comparing the end results for the purpose of assistance in reducing post-operative morbidity and mortality.

He calls attention to the fact that most gynecological operations are elective rather than emergency and that there is usually ample opportunity for thorough pre-operative preparation of the patient.

He has carefully analyzed both series of cases as to morbidity and to mortality with individual tables as to the various types of morbidity complications. The following are the conclusions he draws:

"1. Having conscientiously scrutinized a previous series of one thousand consecutive personal gynecological operative cases, it has been possible to effect a thirty-four per cent reduction in morbidity and a fifty-seven per cent reduction in mor-

tality. In the second series of one thousand, there was morbidity in fifty-three patients and eight died.

"2. Gentleness in separating bowel adhesions, recognition of endometriosis of the rectovaginal septum, refusal to irradiate any patient suspected of harboring a latent pelvic infection, careful peritonealization of raw surfaces, and the use of sheets of guttapercha tissue to cover surfaces that cannot be peritonealized will obviate fecal fistulas and post-operative intestinal obstruction.

"3. The routine administration of ten per cent carbon dioxide in oxygen just before the completion of the operation will minimize the incidence of pulmonary complications in general, and pneumonia in particular.

"4. Dehiscence of an abdominal wound is probably due to tissue hunger and proteolytic digestion of catgut before fibro-plastic production is sufficient to splint the wound, rather than to defective suture material.

"5. Approximation of the vaginal fibers of the levator ani muscles with kangaroo tendon and a subcuticular suture of the skin margin evidently minimize perineal wound infections.

"6. Keeping the bladder free from residual urine lessens the incidence of post-operative cystitis. Residual urine is more of a menace than aseptic catheterization.

"7. Postponing elective operations until the cardio-vascular system is in the best possible condition, and the frequent practice of active motion of the extremities throughout convalescence will practically eliminate post-operative embolism.

"8. Removing the uterus by applying clamps instead of preliminary ligatures is a safe procedure.

"9. Pre-operative blood transfusions should be utilized in all cases of anemia, debility, or sepsis.

"10. Invasion of the cellular connective tissue of the parametrium for the removal of intraligamentary tumors predisposes to subsequent parametritis.

"11. Glucose should always be administered intravenously, never subcutaneously.

"12. It should be the aim of every pelvic surgeon to limit his post-operative morbidity and mortality to an irreducible minimum."

COMMENTS: This is a bit of conscientious work by a very able gynecologist. Though this report embodies no new investigative work, such publications are of extreme value because they present crystallized thought upon the fundamental purpose of pelvic operative work.

One finds it easy to endorse practically all of the conclusions of Dr. Dannreuther, differing only on minor points.

Wendell Long.

The Misuse of Tannic Acid. By Frederic Taylor, M.D. From the Journal of the American Medical Association, April 4, 1936, Pages 1144-45.

Beginning with the statement that the tannic acid treatment of burns has attained its popularity through its success in extremely severe burns, the author takes the definite position that it should not be employed in more or less superficial burns.

Attention is directed to the fact that when only the superficial layers of the skin are involved regeneration takes place from the remaining germinal layer. If the germinal layer is destroyed regeneration takes place from hair follicles and sebaceous glands. The author asserts that in the employment of tannic acid solutions the cells of the germinal layer and the cells in connection with the hair follicles and sebaceous glands are tanned

or "fixed." After the epithelial cells in these structures are tanned or "fixed," they do not regenerate.

The author compares the more or less superficial burn to donor sites of a split skin graft. He says that no one would consider treating such a site with tannic acid, and "yet this situation is quite comparable with the usual burn in which regeneration must also take place from the remaining living epithelial cells of the hair follicles."

The final conclusion is that in the great majority of burns it is not wise to institute any therapy that might destroy surviving epithelial cells. It is suggested that bland dressings of saline solution, dilute solution of sodium hypochlorite or ointment be employed until it can be determined "just which epithelium will survive and which will die."

While the author gives credit to the usefulness of the tannic acid treatment in severe burns, he points out that it is probable that the lowered mortality is very largely due to two other factors: (1) An increased interest on the part of the hospital staff; (2) a full appreciation of the result of shock and the replacement of lost fluids in the body.

LeRoy Long.

SOME CASE REPORTS

Case I—Melanoblastomatosis Arising From Neglected Black Mole. Relentless Course. Death in Thirteen Months.

A married woman, Mrs. J. A. H., multipara, thirty-five years of age, came to the Clinic on February 1, 1935, complaining of: (1) Lump in the left breast, painless, noticed for about three and one-half years, during which time it had gradually increased from the size of a small walnut to the size of an egg. (2) A "birthmark" on the right lower back which had been increasing in size for about six months, and had been bleeding occasionally for longer than three months, during which time a dressing had been worn over it.

The general condition of the patient was good in every respect.

Examination disclosed a firm, irregular, moveable mass about two and one-half inches in diameter above the nipple of the left breast. Clinically, it appeared to be a benign mass.

There was a black, bleeding elevated mass about three-fourths of an inch in diameter just above the posterior iliac crest on the right side. It had all the characteristics of a vicious melanotic growth.

Notwithstanding the good general condition, the husband was advised that the growth on the back represented a most pernicious type of malignancy, and that the prognosis was extremely bad.

On February 4, 1935, a sweeping removal of the growth on the back was done at St. Anthony Hospital by the use of an electric cautery. The pathological report was that it was a melanoblastoma. The mass in the breast was removed at the same time. It was a galactocoele, without any evidence of malignancy.

The operative wound of the back healed with extreme slowness, probably due to the widespread destructive action of the cautery. Finally, after about six or seven months, it was healed entirely, and there was never any local recurrence.

In the early part of June, 1935, our attention was called to an enlargement in the right groin. It was slightly tender. There was no discoloration. There had been a boil on the outer side of the right thigh. Notwithstanding the location of the boil, we had the forlorn hope that it might be an adenitis resulting from it, but, at the same time,

we regarded it with grave suspicion. A little later there was an enlargement in the anterior axillary fold, right side. There was no discoloration. It was not tender.

These masses—the one in the right groin and the one in right anterior axillary fold—were removed by radio knife on October 8, 1935. They were rather deeply placed, and when removed were black in color. The pathological report was melanoblastoma, metastatic. The general condition of the patient was good in every respect.

In the early part of January, 1936, there were some nodules about the operative scar in the right groin. At that time the patient felt very well, but a blood count showed slight reduction in hemoglobin and red blood cells.

On January 29, 1936, the scar in the right groin and a considerable amount of tissue on each side of it, extending down to the muscular structures, were removed. The mass containing several black bodies, the larger being about four-fifths of an inch in diameter, had all the gross characteristics of a melanotic growth. The pathological report was melanoblastoma.

The patient did pretty well for about a week, when there was a secondary hemorrhage from the operative wound, and at the same time excessively profuse menstrual discharge. On February 8, 1936, the vagina was packed, and the operative wound in the groin explored. There was a little oozing about the skin margins. All oozing points were controlled by suture-ligatures, and a firm pack put into the wound cavity. There was no additional external hemorrhage of importance.

After these emergency procedures, there was a transfusion of 500 cc. of citrated blood. The patient felt some better, but complained of pain and distention in connection with the abdominal cavity.

There was vomiting, the vomitus containing a considerable quantity of blood. There was fever and great weakness. There were physical evidences of fluid in the abdominal cavity. Notwithstanding the control of hemorrhage from the operative area and from the uterus, there was a profound anemia with a hemoglobin of fifty, and an R. B. C. of 2,830,000 a few days after the transfusion. The coagulation time was five minutes, forty-five seconds, and the bleeding time four and one-half minutes. There was another transfusion of 500 c.c. of citrated blood, followed by some temporary improvement, but vomiting, the vomitus containing blood, continued, and there was bitter complaint of pain about the abdomen which was very greatly distended. An examination of the abdomen revealed shifting dullness.

On February 18, 1936, there was a hemoglobin of thirty-six and an R. B. C. of 2,560,000. There was another transfusion of 500 c.c. of citrated blood, with only transient benefit. On February 21, 1936, the blood count showed only 1,990,000 red blood cells, with an estimated hemoglobin of forty per cent (Talquist). The patient was extremely weak. There were more evidences of fluid in the abdomen, and a mass, interpreted to be an extension downward from the liver, could be felt in the right upper abdomen. There was another transfusion of 500 c.c. of citrated blood, with considerable temporary improvement.

Early on the morning of March 2, 1936, there was sudden collapse, quickly followed by unconsciousness, and the patient died at 1:20 p. m. that day.

An autopsy confined to the abdominal cavity revealed an enormous amount of blood in the peritoneal cavity, probably mixed with ascitic fluid, which could not be differentiated from the blood.

There were numerous black nodules about the structures in the pelvis and in the mesentery. The right lobe of the liver was greatly enlarged, and contained numerous black masses. It was our conclusion that the enormous amount of blood in the peritoneal cavity resulted from hemorrhage due to disintegration of blood vessels by the extension of metastatic masses. The cause of death was obviously melanoblastomatosis, resulting in intra-peritoneal hemorrhage and exhaustion.

* * *

Case II—Extensive Sub-Acute Pancreatitis, Associated With Pronounced Pathology Bile Tract Area. Cholecystectomy With Drainage of Cystic Duct. Recovery.

H. S. G., white man, sixty-four years of age. History of "indigestion" for four years or longer. During most of that time has been incapacitated for active work. Has had a good deal of pain in the "pit of the stomach."

This patient entered St. Anthony Hospital in the service of Dr. B. E. Mulvey April 3, 1936. The night before coming to hospital there was excruciating pain in the epigastrium. According to the history, it had been necessary to give morphine hypodermatically three times within two hours before the pain was relieved.

He entered hospital about one p. m. with a temperature of 103.4, pulse 78, respiration 20. There was a history of pain in the rectum about two and a half months before coming to the hospital, and that was followed by bleeding from the rectum.

Dr. Mulvey had investigated the patient within a week before his admission to the hospital. The Ewald showed a total acidity of thirty-four, an absence of free HCl, an absence of occult blood. The Wassermann was negative. An x-ray examination during the investigation by Dr. Mulvey did not show any evidences of organic disease of the stomach. There was no x-ray evidence of pathology of the intestinal tract. There was no evidence of neoplasm or ulcer in connection with the rectum.

The patient was extremely uncomfortable. He was semi-delirious. He was extremely restless.

There was moderate rigidity of the epigastrium, and a more pronounced rigidity in the right upper abdomen. The abdomen, generally was not rigid. There was occasional audible peristalsis. Taking into consideration the history of indigestion over a long period of time, the excruciating pain in the epigastrium, the moderate rigidity of the epigastrium and the fever, and in spite of the Ewald report and the negative x-ray findings, we considered a perforation into the lesser peritoneal cavity as a distinct possibility.

The next morning after admission the patient was more comfortable. There was vigorous audible peristalsis. Pulse sixty-four. Temperature 98.6. There was a little staining of the sclerae. The following day the eyeballs were a little more yellow and there was a suggestion of jaundice in connection with the skin.

There was an afternoon elevation of temperature from 100 to 101.8. There was a good deal of nausea, and practically complete anorexia. At the same time, there was less rigidity in the epigastrium. There was still some rigidity in the right upper abdomen, and some tenderness under the right rib margin.

On April 7, 1936, there was an immediate direct van den Bergh reaction with 4.5 mg. per cent azobilirubin per 100 cc. of blood. The bleeding time was one and one-half minutes. Coagulation time four minutes forty-five seconds.

On admission the urine was reddish, clear, acid

in reaction, specific gravity 1.015, albumin trace, glucose 4 plus, acetone negative, indican negative, occasional white blood cell. The blood count showed Hgb. 75, R. B. C. 4,800,000, W. B. C. 6,200, polys. 93, lymphs 7. On April 6, 1936 the W. B. C. count was down to 3,800. On April 7, 1936, it was 7,300. It will be observed that there was not a leukocytosis at any time, and that at one time—April 6, 1936—there was a pronounced leucopenia.

The patient had been given glucose intravenously every day, and that may account to a very large extent for the finding of sugar in the urine.

The jaundice became more distinct, but it was never pronounced.

The patient was observed for a week, during which time, what with the administration of glucose intravenously and normal saline solution subcutaneously, there was considerable improvement in the general condition.

Casting up the data collected during this week of observation, we abandoned the hypothesis of a perforating ulcer into the lesser peritoneal cavity, and concluded, finally, that there was an infection of the bile tract area, probably with stones, with at least a partial obstruction of the common duct.

An operation was performed on April 10, 1936. There was a greatly thickened, whitish gallbladder, containing thin, pale bile, and many tiny black calculi, one of them being fixed in the cystic duct. The omentum was adherent to the gallbladder. The pancreas was greatly enlarged throughout its entire extent. The right lobe of the liver was low, heavy and dark, but there were no nodules found in it. The stomach appeared to be normal.

It was very clear that there was an extensive involvement of the pancreas, and since it was so uniformly involved from head to tail, it was concluded that it was probably not due to a neoplasm, but to an inflammatory process.

The gallbladder was dissected from the liver, beginning at the fundus, down to the cystic duct. The duct was divided, and a very small catheter introduced into it, the catheter being fixed by one catgut suture.

On the evening of the day of the operation the temperature was 100. On the day following the operation there was a gradual elevation of the temperature until it reached 103.4, and it hung around 103 for about twenty-four hours. At that time there was a rather rapid drop to 99, after which it oscillated between 98 and 101 for a week. During the next three days the maximum daily temperature was around 100. After that time it dropped to normal, and remained around normal until the patient was discharged.

There was an extremely free flow of bile per catheter in the cystic duct. After the first few days, the patient was greatly relieved, and after four or five days was able to take liquids and semi-solids with relish.

The patient was discharged April 26, 1936, twenty-three days after admission to the hospital, and sixteen days after the operation. He was able to be up and about the room, and expressed himself as feeling better than he had felt for several years.

In this case we believe that it is logical to arrive at two distinct conclusions: (1) The primary pathology was in the bile-tract area, the pancreatitis being secondary to it. (2) The most important part of the operative procedure was the drainage of the pancreas by way of the common duct, the remains of the cystic duct and the catheter that was placed into it.

It is possible that satisfactory immediate results might have been obtained by doing a cholecystos-

tomy, but, in view of the very distinct and gross evidences of gallbladder disease, it was decided that it would be best to remove the gallbladder because if it had not been removed it would have been a potential source of future difficulties.

We believe that, in the case of this patient, there was a partial obstruction of the common duct due to an extensive cholangitis.

L. L. and L. D. L.

PLASTIC SURGERY

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Reconstructions About the Nasal Tip. Claire L. Straith, M.D., F.A.C.S., Detroit, Michigan. S. G. & O., Vol. 62, No. 1, January, 1936.

The author states that procedures for correction of nasal deformities of all grades of severity have been greatly improved within recent times. As a result of this improvement, the patient requiring rhinoplasty, whatever the degree, can now be assured of a cosmetic or functional result sufficiently satisfactory to enable him to resume his rightful place in society.

The purpose of the article is to demonstrate the feasibility of successful rhinoplastic reconstructions without recourse to extrafacial sources for skin grafting, avoiding at the same time unsightly secondary facial blemishes. A new technique for the correction of nasal depressions which accomplishes its purpose without necessity of external incisions or from cartilage transplants is also presented. The Indian, or forehead flap, method, while an excellent means in women for covering major defects with skin of suitable color and texture, has definite disadvantages in the male. This method in men practically resolves itself into a matter of exchanging an ugly nasal defect for a less unsightly though nevertheless visible forehead scar. The Italian, or arm flap, method is mentioned only to be condemned. The skin provided has a color and texture which differs markedly from the facial integument. Large amounts of subcutaneous fat interferes with moulding; and in healing as well.

To be acceptable, a surgical reconstruction of the nose must have a covering of smooth skin of normal color, a contour which harmonizes with the face, a functional epithelial lining and an adequate air way. Infection or malignant processes must be eradicated before repair is commenced; distorted tissues must be freed and replaced.

For reconstructions about the nasal tip the following methods are suggested:

SKIN AND SOFT TISSUE DEFECTS

1. Small skin defects are readily covered by Wolfe grafts obtained from the upper eye lid or posterior aspect of the ear. This method is particularly useful when repair of the surface skin defects is attempted shortly after injury.

2. Defects of the ala nasi may be corrected by delayed pedicle flaps rolled down from the side of the nose, the normally rounded alar border being formed by the rolled edge. The resulting defect at the side of the nose is then covered by a Wolfe graft.

3. Skin and soft tissue losses at the nasal tip in women, especially when extensive, are best treated by forehead flap transfers, either by pedicles nourished by the temporal artery, or by the classical Indian method. In men the nasal tip is restored

by a tube pedicle from behind the ear by way of the sternal notch. This method has several advantages: (1) forehead scars are avoided, (2) the skin matches the nasal integument and is practically hairless, (3) the skin is thin and easily molded to shape, (4) the resulting neck scar is inconspicuous.

SUPPORTING STRUCTURE DEFECTS

Cartilage rather than prosthetic inserts of foreign substances should be used in reconstruction of the cartilaginous portion of the nasal bridge. Cartilage is not absorbed and has the advantage of being readily shaped and easily grafted.

1. Depressions of the cartilaginous bridge associated with prominence of the nasal tip can be filled in by one or more pieces of ear cartilage inserted through a mid-columellar incision.

2. Broadly depressed cartilaginous bridges associated with overhanging flattened nasal tips can be treated by several methods:

A. Hinged or mortise-jointed rib cartilage transplants may be inserted so that the vertical support rests upon the maxilla; the horizontal arm is shaped to correct the defects in the nasal bridge.

B. The introduction of rib cartilage transplants for depressions of the cartilaginous bridge can be avoided by the use of the author's recent extension of the principle of Kazanjian operation, (eversion of the lateral wings of the alar cartilage and suturing them back to back to support the nasal tip). The author augments this procedure by including also the upper lateral cartilages which are first cut, according to the depth of the bridge depression and then everted. They are next stitched back to back with two sutures of chromic catgut. Horsehair mattress sutures passed through the everted cartilage flaps and tied over rolls of gauze help to maintain their upright position. The horsehair sutures are removed in one week.

This method combined with that of the Kazanjian operation (which merely elevates and narrows the nasal tip) has produced excellent corrections of overhanging flattened nasal tips associated with broadly depressed cartilaginous bridges. It has the advantage of eliminating the necessity of rib resections as a source of cartilage, a disabling procedure which is not devoid of danger. It also forms a more flexible and natural nasal bridge than is obtained from the use of rib cartilage transplants. Moreover, the advantage of permitting the surgeon to shorten the nose and to elevate the bridge in a single stage operation without the necessity of external incisions, represents a distinct advantage over the more complicated and hazardous procedures hitherto described. The absence of a nasal septum strong enough to support the everted cartilages is an important contra-indication to this procedure.

COMMENT: The methods described undoubtedly are an advantage in reconstructions about the nose. They are not altogether new. Small skin defects about the nose may be covered with a skin graft immediately after injury using skin from the upper eyelid, back of the ear, or side of the neck.

This method insures a more nearly perfect skin texture of the graft.

It is well to avoid the disfiguring forehead scar in reconstructions of the nasal tip especially in men. However, in building a new nose or a large portion of a nose it is best to use the forehead material.

Most everyone agrees that cartilage is to be preferred in reconstructing the nasal tip. Ivory, paraffin and inert substances are to be condemned.

Tannic Acid and Silver Nitrate in Burns. Adalbert G. Bettman, M.D., F.A.C.S., Portland, Oregon. S. G. & O., February 15, 1936.

Dr. Bettman outlines the treatment for burns as follows:

1. The patient is given a narcotic which is repeated as often as may be necessary for comfort.
2. Fluids must be forced.
3. Grease or oil in any form should not have been used, but if such an application unfortunately has been made, it must be removed with ether or benzine before treatment is applied.
4. All blebs are to be opened and all loose skin and other burned tissue are to be removed.

A thorough application of five per cent tannic acid solution is made by means of cotton swabs. Following this, ten per cent silver nitrate solution is applied in the same manner. When this second solution is put on, a protective coagulum forms at once. Thus, a task that formerly required up to twenty-four hours is accomplished in a few minutes. The patient is placed in a tent heated by electric light bulbs and the areas treated are dried and kept dry. In a few days the coagulum begins to loosen and is removed as early as possible, a scalpel being used if necessary. Unhealed areas are treated by application of Oxyquinoline sulphate scarlet R gauze, the formula of which is:

R: Oxyquinoline sulphate	grains 10
Chlorbutanol (chloretone)	grains 40
Scarlet R ointment, 5%	ounces 4
Liquid petrolatum	drams 4

The advantages claimed for this method are, a rapid tanning, avoidance of frequent dressings, keeping the patient dry and the speeding up of epithelial growth.

The author claims that under this treatment, skin grafts and other secondary corrective measures are very greatly reduced. The author claims that under the old method of using tannic acid in burns, there occurred an absorption of substances which affect the kidneys, liver, spleen, adrenals and other internal organs. He states that such effects have not been noted in patients who have been treated with tannic acid and silver nitrate, in the absence of grease.

When moisture is applied to a wound over a period of hours infection develops and tissues become edematous with some further breaking down. The new method avoids this complication.

Instead of the usual blood concentration, the hemoglobin and red cell count returns early to normal. The white blood cell count is low, the staff cells being relatively few throughout the entire healing period.

The author has used the tannic acid and silver nitrate method for two years and he lists the following advantages secured by the new method:

1. Saving lives that would be lost through slower method of tanning.
2. Immediate stopping of loss of body fluids, thereby preventing consequent concentration of blood.
3. Immediate prevention or very definite minimizing of shock.
4. Immediate prevention of absorption of toxic products.
5. Prevention of infection by the short period of application of moisture and the early drying of tanned tissues.
6. Saving of the kidneys and other organs from the effects of fluid concentration and the absorption of toxins and infection.

7. The greater comfort of the patient.
8. The fact that the patient is safely carried past the first twenty-four hours, the most critical period following a serious burn.
9. The fact that the patient avoids the second critical period, that of infection, and late absorption of toxic products.
10. The simplification of nursing problem, especially in the first twenty-four hours.
11. The prevention of further breaking down of tissues, resulting from long application of wet dressings.
12. The prevention of chilling, resulting from the long application of cold, wet dressings.
13. The formation of a thin, flexible coagulum.
14. The speedy healing of the burned areas with shortened period of hospitalization.
15. The prevention or minimizing of heavy contracting scars by early rapid healing in the absence of infection.
16. The lessening of the amount of skin grafting and secondary corrective surgery.

ORTHOPAEDIC SURGERY

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Tuberculosis of the Shafts of Long Bones: Clinical and Roentgenological Study with a Report of Eight Cases. C. K. Petter and J. B. Medelman. Amer. Rev. Tuberc. XXXII, 285, 1935.

Of the 4,896 patients admitted to Glen Lake Sanatorium, 275 had bone and joint tuberculosis, with or without pulmonary manifestations. Of this latter number, eight patients had tuberculosis of the shafts of the long bones. This type of lesion, therefore, is extremely rare. The authors believe that tuberculosis of the shafts of long bones is primarily destructive in the cancellous portion, becoming proliferative when the periosteum is approached. In the differential diagnosis of lesions in the shafts of long bones, tuberculosis, syphilis, and pyogenic osteomyelitis should always be considered.

The History of Plaster-of-Paris in the Treatment of Fractures. J. J. Monro. Brit. J. Surg., XXIII, 257, 1935.

At least four thousand years ago, starch was being used in linen to give a stiffening effect for splinting.

Three phases in the use of plaster are recognized. Cheselden (1688-1752) and Larrey (about 1798) concentrated their attention to the bone. Later Seutin (1834) and Lucas-Championniere gave prior consideration to the soft parts. Movements of joints and massage are emphasized and light, portable starch apparatus was used. It remained for Krause and Bohler to point out that efficient splinting of fracture would allow the limb to be kept constantly in use.

Matthysen in 1852 first described the use of powdered plaster-of-Paris in treating fractures. When the time came for the removal of the bandage, this was done by wetting the plaster and unwinding the bandage.

Spondylitis Ankylopoietica (Spondylitis Ossificans Ligamentosa). F. Campbell Golding. Brit. J. Surg., XXIII, 484, Jan., 1936.

Rigidity of the spine from this condition may

appear in any part, but the Marie-Strumpell type in the lumbar spine and the Bechterew type in the upper dorsal spine are the forms about which most has been written.

Infection is commonly believed to be the cause of the condition, although proof is lacking. Occupation, trauma, or strain do not appear to play a part. Males are most commonly affected, and the average age is the early thirties. The writer believes that the lesions occur first in the sacro-iliac joints; the smaller joints of the spine are then involved, with secondary involvement of the vertebral bodies and ligaments. There is extensive connective-tissue formation with final ossification of the articular surfaces.

The writer, a roentgenologist, has collected the roentgenograms of ninety-one patients suffering from spondylitis ankylopoietica. In every case, the sacro-iliac joints were involved, while in thirty-three cases, the sacro-iliac joints were involved, but the spine was unaffected. The symptoms in these latter patients were the same as the early symptoms in the more advanced group.

All patients gave a history of muscular and joint pains long before the onset of spinal rigidity. The author believes that the condition should be recognized earlier, that the sacro-iliac joints are the earliest clues to the diagnosis and to the degree of severity of the disease.

In some patients, the lesions burn themselves out and cease to give symptoms. Other patients get periods of relief from no treatment. Very little is said about the active treatment, but this omission is excusable because the article has been based on the roentgenographic study of the condition.

INTERNAL MEDICINE

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By HUGH JETER, M.D.

Clinical Observations with Insulin Protamine Compound. Randall G. Sprague, M.D., Fellow in Medicine, Mayo Foundation; Benjamin B. Blum, M.D., Fellow in Medicine, Mayo Foundation; A. E. Osterberg, Ph.D., Edwin J. Kepler, M.D., and Russell M. Wilder, M.D., Rochester, Minn.

This is the third report which has appeared in Journal, A. M. A., on insulin protamine compound, a new form of insulin which has been distributed to a good many doctors for clinical trial and which will soon be on the market. In this article it is called "insulin P" and the regular insulin such as we have been using "insulin R."

The results of their investigations are summarized as follows: The immediate effect of insulin-P (insulin protamine compound) is much less than that of insulin-R (regular insulin). When the former is used alone, and given as a single dose before breakfast, the meals of the first few days provoke glycosuria, but when the dose is properly adjusted the level of the blood sugar on successive mornings decreases progressively and the elevating effect of meals diminishes until, by the end of from four to six days, a normal level of blood sugar may be attained even in cases of severest diabetes.

Supplementing insulin-P with small doses of insulin-R will shorten the period of obtaining control. Insulin-R should not be mixed in the same syringe or injected into the same site with insulin-P. It has not been necessary to continue the supplementary use of insulin-R after the first few

days in the milder cases, but probably in many cases such supplementary use of insulin-R will be desirable, especially in emergencies. Until more experience has been obtained it would appear that insulin-R will be the insulin of choice when quick action is desirable, as in the treatment of acidosis.

Although insulin-P, in many cases, makes possible effective management of diabetes with only one administration of insulin a day, and with less insistence on rigid control of the diet, its careless use or disregard of the diet is attended with danger.

COMMENT: Evidently an extraordinary achievement has been reached in preparing an improved form of insulin. However, this means that very soon we will be confronted with the problem of evaluating new products or drugs which will be introduced to many physicians by detail men and it appears that there will be some competition and that some of the new insulin will not be prepared as has the product represented in this paper. I believe, therefore, that it is fortunate that we have reports such as this one to rely upon.

In a recent report at the meeting of the American College of Physicians, Dr. Joslin cited several cases which were handled by the protamine insulin more satisfactorily than by the regular insulin.

Glycosuria and Hyperglycemia in Coronary Thrombosis

With the purpose of determining the frequency of disturbed carbohydrate tolerance during the acute phase of coronary closure and to prove or disprove the existence of a latent diabetes in these cases Adolph P. Raab and Meyer A. Rabinowitz, Brooklyn (Journal A. M. A., May 16, 1936), studied twenty-one patients, seventy-one per cent of whom gave evidence of abnormal sugar tolerance; but when only those twelve cases which were examined within two weeks of their coronary closure were considered, an abnormal sugar response was found in every instance. Since known cases of diabetes were excluded from this series it becomes evident that soon after the occurrence of a coronary closure the finding of an abnormal sugar tolerance curve is the rule. Of the nine cases in which a significant interval existed between the time of coronary closure and the dextrose tolerance test, only three gave an abnormal response. That sixty-seven per cent normal curves were found in this group in which an interval was permitted to elapse, while universally abnormal curves existed in the acute group, would argue against the existence of a latent diabetes as the predominant factor and speak for a temporary mechanism. The authors believe that a disturbance involving the vegetative nervous centers of the brain, as has also been suggested by Hausner and Hoff, is the important factor. The transient nature of the disturbed carbohydrate tolerance and its occurrence in cases in which neither pain nor shock was prominent would be consistent with this explanation. The appearance of glycosuria in numerous types of brain disorders, such as concussion, hemorrhage and tumor, would lend support to this belief. Insulin has been shown to be a drug that must be used with the greatest care in coronary closure. It is therefore most important to realize the existence of an underlying altered carbohydrate metabolism in these cases and to differentiate carefully coronary thrombosis with transient hyperglycemia and glycosuria from coronary closure and true diabetic acidosis, and from diabetic acidosis with electrocardiographic changes. As Scherf has pointed out, the question of a true diabetes mellitus cannot always be settled with certainty at the time of the attack of coronary thrombosis. The authors'

study reemphasizes the importance of doing blood sugar estimations when the urine is negative for sugar. Root and Graybiel found that the prognosis of angina pectoris is worse in the diabetic patient and that those diabetic patients who died in the first year of their angina had received inadequate treatment for their diabetes.

The Waterhouse-Friderichsen Syndrome

E. E. Aegerter, New York (Journal A. M. A., May 16, 1936), adds a case of his own and one case from the records of the Willard Parker Hospital which in history, symptomatology and pathology give the typical characteristics of the Waterhouse-Friderichsen syndrome. The syndrome was first accurately described in the literature of 1901. Since that time it has been recognized in England and Germany as a disease entity. The symptomatology includes sudden onset, malaise, restlessness, and often gastro-intestinal symptoms. These are followed shortly by lethargy, which rapidly deepens into coma. High fever, weak, rapid pulse, intense cyanosis and purpuric hemorrhages into the skin are characteristic. The disease is usually fatal in from sixteen to twenty-four hours. Massive, bilateral adrenal hemorrhage is the most common postmortem observation. The etiology is probably a fulminating meningococcemia. Suggested therapy includes adrenal cortex extract, epinephrine, sodium chloride, fluids, antimeningococcus serum, dextrose and transfusions.

The Summer-Time Use of Mead's Oleum Percomorphum

During the hot weather, when fat tolerance is lowest, many physicians have found it a successful practice to transfer cod liver oil patients to Mead's Oleum Percomorphum.

Due to its negligible oil content and its small dosage, this product does not upset the digestion, so that even the most squeamish patient can "stomach" it without protest.

There are at least two facts that strongly indicate the reasonableness of the above suggestion: (1) In premature, to whom cod liver oil cannot be given in sufficient dosage without serious digestive upset, Mead's Oleum Percomorphum is the antiricketic agent of choice. (2) In Florid, Arizona and New Mexico, where an unusually high percentage of sunshine prevails at all seasons, Mead's Oleum Percomorphum continues increasingly in demand, as physicians realize that sunshine alone does not always prevent or cure rickets.

Mead Johnson & Company, Evansville, Indiana, invite you to send for samples of Mead's Oleum Percomorphum for clinical use during the summer months to replace cod liver oil.

Summary of Regional Ileitis: Report of Case of Colonic Involvement and Suggestion of New Term

The case that A. J. Rosenblate, A. A. Goldsmith and A. A. Strauss, Chicago (Journal A. M. A., May 23, 1936), report shows a typical clinical and roentgenologic picture of regional ileitis, with added involvement up to but not including the distal portion of the transverse colon. The patient had been previously treated for four years for subacute bacterial endocarditis (despite negative blood cultures) and renal disease. The picture of regional ileitis is that of dull pain in the right lower quadrant, low grade intermittent fever, slight diarrhea, anorexia, anemia and rapid pulse. Roentgenologic studies of the ileum reveal characteristic manifestations. In cases in which the pathologic condition extends to the colon, the authors suggest the term "ileocolitis ulcerosa chronica." The treatment of choice is surgery.

County-wide Use of Immune Globulin in Modification and Prevention of Measles

According to E. G. McGavran, Hillsdale, Mich. (Journal A. M. A. May 23, 1936), in the face of a predicted epidemic of measles of unusual proportion, the Hillsdale County Medical Society met the problem by distributing immune globulin, free of charge to the physicians. In return the physicians kept a careful record of the cases and turned them in to the secretary of the county medical society for analysis and conclusions. From three to five cc. of immune globulin was given intramuscularly or twelve cc. orally, when possible between the fourth and ninth day after exposure. Modification and no measles was considered as success. Only cases of definite exposure and definite history of susceptibility were included in the group in which measles did not develop. No patients less than six months of age are included in the series. Those receiving the usual intramuscular administration of the serum (seventy-seven cases in all) show ninety-five per cent success to five per cent failure. There were sixteen patients who received oral administration, twelve cc. of immune globulin in three four cc. doses in ice water before breakfast. Modified measles was present in twelve cases, no measles in one and in three there was no effect. After intramuscular administration, slight local reaction occurred in thirty-two, or roughly, one-third of the cases. Slight febrile reaction was observed in less than one-sixth of the cases. These reactions occurred in from twelve to twenty-four hours and did not last. No severe or general reaction was reported. The three chief variables are: amount of exposure, amount of immune globulin, and the time of administration. The last remains the most important single factor, but with intimate exposure in homes, an increased dosage or an earlier dosage is necessary to produce modification. In casual exposure it is wise to prolong the time before administration or lessen the amount of immune globulin to produce modification. A fourth factor may be considered as age. Older patients need more immune globulin and earlier administration to produce the same results.

Increased Metabolism of Obesity: Use and Abuse of Metabolic Stimulants

James J. Short and Harry J. Johnson, New York (Journal A. M. A., May 23, 1936), state that with increasing weight there is concomitantly an increasing total resting metabolism. That is, a person produces more heat when overweight than at normal weight. For instance, in the individual at normal weight under basal conditions heat is being produced at a certain rate per unit of surface area. When the same person increases his weight the surface area is also increased to accommodate this additional fat. If the heat production per unit of surface area is the same in the two instances, the total heat production in the obese state is obviously greater. This relationship between weight and total metabolism has long been known but has been obscured by the emphasis that has been placed on basal metabolism to the exclusion of the total. Since in obesity there is already an increased total metabolism, the giving of metabolic stimulants in the form of thyroid preparations or drugs such as dinitrophenol is entirely illogical. At this stage such stimulants are not well tolerated. Thyroid extract caused toxic symptoms to become manifest very rapidly in a number of cases, although the explanation at the time was not well understood. As pointed out by Evans and Strang, many obese patients with high total heat production already manifest certain toxic symptoms characteristic of exophthalmic goiter. Additional stimu-

lation would seem to be unwarranted and dangerous. A series of patients ranging from one to one hundred and thirty-five per cent overweight has been studied as to surface area, basal metabolism, total heat production, pulse rate, blood pressure and pulse pressure. The basal metabolism in obesity is usually within normal limits but tends to be in the lower ranges of normal for the slightly obese and in the higher ranges for the excessively obese. The increased metabolism favors rapid weight loss on dietary restriction. Thyroid preparations may be employed judiciously in later stages of treatment with submaintenance diets when it can be shown or assumed that the metabolic rates have been lowered. In all metabolic studies the heat production per unit of body surface (the so-called basal metabolism) and the total heat production of the organism under basal conditions should be sharply differentiated, since they represent two entirely different approaches to the problem of obesity. A study of the pulse rate has shown that those cases presenting a resting rate over eighty were definitely more overweight than those presenting lower rates, and that the total metabolism was likewise correspondingly higher.

The Physiologic Approach to Otolaryngology

Ralph A. Fenton, Portland, Ore. (Journal A. M. A., May 23, 1936), points out that the physiologic approach to otolaryngology was for many years a matter of measurement of motor or sensory functions. Of recent years, experimental observations have extended our knowledge of the cellular activities of normal and diseased ciliated membranes and have explained the growth, destruction and regeneration of these structures. The study of artificial sinus infections has disclosed the etiology of cyst and abscess formations, of osteomyelitis of the frontal sinus, of epidural abscess. In otology, mensuration of cochlear function has been carried into the eighth nerve, tone by tone, through electrical amplification. The ossicular muscles have been studied under the dissection microscope and their specific responses to sound stimuli accurately reported. From the vestibular system, six separate pathways for forced movements have been worked out, and the complex anatomy of the cerebellum has been unraveled through careful study of its developing tracts in the lowest vertebrates. The use of human immune serum instead of vaccines, and of transfusion instead of jugular ligation, has offered hope in recent otologic practice, in meningitis and in sinus thrombosis. Knowledge of the fundamentals of otolaryngologic physiology, interrelating various new discoveries and applying them to our field, will not teach us anything about surgical indications or surgical technic. But it may lead to a better understanding of the need for surgery and will be of great help in the application of modernized principles of immunity for the prophylaxis of disease of the upper respiratory tract. Otolaryngology in America will continue its progress, through insistence on higher standards of individual preparation, and greater interest by individuals thus prepared in the physiologic relationship of our special field to the various systems of the body as a whole. Team work with other members of hospital staffs often points the way to interesting bits of research. Each one, however far away from others in the specialty, should feel that he is a collaborator, through his reading and his papers before local medical groups, in the task of appraising the general profession that we are not immediately bent on drastic surgery but that we are building, through physiologic and pathologic knowledge, a sound foundation for the medical and surgical otolaryngology of the future.

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BURNS, S. L.	Stratford
CALLAWAY, JOHN R.	Pauls Valley
GREENING, W. P.	Pauls Valley
GROSS, J. T.	Lindsay
JOHNSON, G. L.	Pauls Valley
LINDSEY, RAY H.	Pauls Valley
MONROE, HUGH H.	Lindsay
PRATT, CHAS. M.	Lindsay
ROBBERTSON, M. E.	Wynnewood
SHI, A. H.	Stratford
SULLIVAN, C. L.	Elmore City
TAYLOR, E. F.	Maysville
WILSON, H. P.	Wynnewood
WINTER, J. D.	Wynnewood

GRADY

AMBRISTER, J. C.	Chickasha
BARRY, J. R.	Alex
BAZE, W. J.	Chickasha
BONNELL, W. L.	Chickasha
BOON, U. C.	Chickasha
COOK, W. H.	Chickasha
COX, C. P.	Ninnekah
DOWNEY D. S.	Chickasha
EMANUEL, L. E.	Chickasha
EMANUEL, ROY	Chickasha
GERARD, G. R.	Chickasha
HAMPTON, P. J.	Rush Springs
HENNING, A. E.	Tuttle
LEEDS, A. B.	Chickasha
LITTLE, AARON	Minco
LIVERMORE, W. H.	Chickasha
MARRS, S. O.	Chickasha
MASON, REBECCA H.	Chickasha
McCLURE, H. M.	Chickasha
MITCHELL, C. P.	Chickasha
NUNNERY, A. W.	Chickasha
PLYLE, OSCAR S.	Chickasha
RENEGAR, J. F.	Tuttle
WOODS, L. E.	Chickasha

GRANT

GRIMAND, W. R.	Medford
HARDY, I. V.	Medford
LAWSON, E. E.	Medford
LIVELY, S. A.	Wakita

GREER

BORDER, G. F.	Mangum
CHAMBERS, M. E.	Vinson
CHERRY, G. P.	Mangum
DODSON, W. O.	Willow
HOLLIS, J. B.	Mangum
LANSDEN, J. B.	Granite

LOWE, J. T.	Mangum
MEREDITH, J. S.	Duke
NELSON, H. J.	Granite
OLIVER, W. D.	Mangum
PEARSON, LEB. E.	Mangum
POER, E. M.	Mangum

HARMON

ALLGOOD, E. J.	Gould
HOLLIS, LYNN E.	Hollis
HOPKINS, SAMUEL W.	Hollis
HUSBAND, WM. G.	Hollis
JONES, JAMES E.	Hollis
LYNCH, RUSSELL H.	Hollis
RAY, W. T.	Gould
YEARGAN, WM. M.	Hollis

HASKELL

CARSON, WM. S.	Keota
HILL, A. T.	Stigler
RUMLEY, JAMES C.	Stigler
THOMPSON, WM. A.	Stigler
TURNER, THOS. BOYD	Stigler
WILLIAMS, N. K.	McCurtain

HUGHES

BENTLEY, J. A.	Allen
BUTTS, A. M.	Holdenville
BUTTS, IMOGENE	Holdenville
DAVENPORT, A. L.	Holdenville
DIGGS, G. W.	Wetumka
FLOYD, W. E.	Holdenville
FORD, R. B.	Holdenville
FORSYTHE, THOS.	Allen
FRYE, HARRY	Holdenville
HAMILTON, S. H.	Non
HEMPHILL, J. A.	Wetumka
HICKS, C. A.	Wetumka
HOWELL, H. A.	Holdenville
MARTIN, C. S.	Calvin
PRYOR, V. W.	Holdenville
STONER, R. W.	Wetumka
TAYLOR, W. L.	Holdenville

JACKSON

ABERNETHY, EDW. A.	Altus
ALLGOOD, JOHN	Altus
BIRD, JESSE,	Eldorado
BROWN, R. F.	Altus
CROW, E. S.	Olustee
ENSEY, J. E.	Altus
FOX, RAYMOND H.	Altus
HIX, JOSEPH B.	Altus
MABRY, EARL W.	Altus
McCONNELL, L. H.	Altus
McFADIN, J. S.	Altus
REID, JOHN R.	Altus
RUDELL, W. P.	Altus
SPEARS, CLAUD G.	Altus
STARKEY, WAYNE	Altus
TAYLOR, ROBT. Z.	Blair

JEFFERSON

ANDRESKOSKI, W. P.	Ryan
BROWNING, W. M.	Waurika
COLLINS, D. B.	Waurika
DERR, J. I.	Waurika
EDWARDS, F. M.	Ringling
HOLLINGSWORTH, J. T.	Waurika
MAUPIN, C. M.	Waurika
McPHERSON, J. M.	Terrell
MINGUS, F. M.	Loco
WADE, L. L.	Ryan
WATSON, J. W.	Ryan

JOHNSTON

CLARK, GUY	Milburn
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KAY

ARMSTRONG, W. O.	Ponca City
ARRENDELL, C. W.	Ponca City
BEATTY, J. H.	Tonkawa
BECKER, L. H.	Blackwell
BERRY, G. L.	Blackwell
BROWNE, H. S.	Ponca City
CLIFT, M. C.	Blackwell
DARNELL, E. E.	Toppenish, Wash.
DENHAM, T. W.	Three Sands
GIBSON, R. B.	Ponca City
GORDON, D. M.	Ponca City
GOWEY, H. O.	Newkirk
*HAWKINS, J. C.	Blackwell
HOWE, J. H.	Ponca City
HUDSON, J. O.	Braman
KREGER, G. S.	Tonkawa
*LESLIE, W. M.	Blackwell
MALL, WERNER W.	Palm Springs, Calif.
MATTHEWS, DEWEY	Tonkawa
McELROY, THOMAS	Ponca City
MILLER, D. W.	Blackwell
MOORE, G. C.	Ponca City
MORGAN, L. S.	Ponca City
NEAL, L. G.	Ponca City
NIEMANN, G. H.	Ponca City
NORTHCUTT, C. E.	Ponca City
NUCKOLS, A. S.	Ponca City
OBERMILLER, R. G.	Ponca City
PETERS, M. L.	Blackwell
RISSER, A. S.	Blackwell
SANGER, W. W.	Ponca City
SPENCE, H. M.	Dolos, Texas
STALEY, P. A.	Palm Springs, Calif.
VANCE, L. C.	Ponca City
WAGGONER, E. E.	Tonkawa
*WAGNER, J. C.	Ponca City
WALKER, I. D.	Tonkawa
WHITE, M. S.	Blackwell
YEARY, G. H.	Newkirk

KINGFISHER

CAVETT, E. R.	Loyal
DIXON, A.	Hennessey
HODGSON, C. M.	Kingfisher
GOSE, C. O.	Hennessey
LATTIMORE, F. C.	Kingfisher
PENDLETON, JOHN W.	Kingfisher
STURGEON, H. VIOLET	Hennessey
TOWNSEND, B. I.	Hennessey
VINCENT, I. H.	Dover

KIOWA

ADAMS, J. L.	Hobart
ADAMS, RICHARD	Hobart
ANDERSON, H. R.	Mountain View
BONHAM, J. M.	Hobart
BRAUN, J. P.	Hobart
BRUCE, J. R.	Snyder
FINCH, J. WM.	Sentinel
HATHAWAY, A. H.	Mountain View
LAND, J. A.	Hobart
LLOYD, H. C.	Hobart
MARTIN, F. F.	Roosevelt
MILES, E. P.	Snyder
MOORE, J. H.	Hobart
PRESTON, C. R.	Mountain Park
RITTER, J. M.	Roosevelt

*Deceased

WALKER, F. E. Lone Wolf
WATKINS, B. H. Hobart

LATIMER

HAMILTON, E. B. Wilburton
HARRIS, J. M. Wilburton
HENRY, R. L. Wilburton
RICH, R. L. Red Oak

LE FLORE

BAKER, F. P. Talihina
BEVILL, S. D. Poteau
BOOTH, G. R. LeFlore
COLLINS, E. L. Panama
DEAN, S. C. Howe
DUFF, W. M. Braden
FAIR, E. N. Heavener
GILLIAM, W. C. Spiro
HARTSHORNE, G. E. Picner
HEAD, W. M. Talihina
HENRY, M. L. Heavener
MINOR, R. M. Williams
ROLLE, NEESON Poteau
SHIPPEY, W. L. Poteau
WOODSON, E. M. Poteau
WRIGHT, R. L. Poteau

LINCOLN

ADAMS, J. W. Chandler
ANDERSON, W. D. Claremore
BAILEY, C. H. Stroud
BAIRD, W. D. Prague
BERRY, THOS. M. C.C.C. Camp, Bogato, Texas
BURLESON, NED Prague
DAVIS, W. B. Stroud
HOWELL, C. H. Meeker
JENKINS, H. B. Tryon
MARSHALL, A. M. Chandler
MURRAY, LEVI, 406 Federal Bldg., Oklahoma City
NICHOLS, U. C. Davenport
NORWOOD, F. H. Prague
ROBERTSON, C. W. Chandler
ROLLINS, J. S. Prague
*SOSBEE, J. W. Stroud

LOGAN

ALLEN, ROBT. Guthrie
BARKER, C. B. Guthrie
BARKER, E. O. Guthrie
BARKER, PAULINE Guthrie
CORNWELL, N. L. Coyle
FIRST, F. R. Crescent
GARDNER, P. B. Marshall
GOODRICH, E. E. Crescent
GRAY, DAN Guthrie
HAHN, L. A. Guthrie
HILL, C. B. Guthrie
LARKIN, W. H. Minco
LE HEW, J. L. Guthrie
MILLER, WM. C. Guthrie
PETTY, C. S. Guthrie
RINGROSE, R. F. Guthrie
RITZHAUPT, L. H. Guthrie
SOUTER, J. E. Guthrie
TRIGG, F. E. Guthrie
WEST, A. A. Guthrie

MAJOR

CAMPBELL, JOHN D. Fairview
SCOTT, G. E. Ringwood
SPECHT, ELSIE Fairview

*Deceased

MARSHALL

HAYNIE, W. D. Kingston
HOLLAND, J. L. Madill
LOGAN, J. H. Lebanon
ROBINSON, P. F. Madill
YORK, J. F. Madill

MAYES

ADAMS, SYLBA Hayward, Wis.
BRYANT, W. C. Choteau
HACKLER, H. W. Pryor
HERRINGTON, V. D. Pryor
HILLIS, J. E. Pryor
HOLLINGSWORTH, J. E. Strang
MORROW, B. L. Salina
PUCKETT, CARL 22 W. Sixth, Oklahoma City
RUTHERFORD, V. M. Pryor
WHITAKER, W. J. Pryor
WHITE, L. C. Adair

McCLAIN

BARGER, G. S. Purcell
COCHRANE, J. E. Byars
DAWSON, O. O. Wayne
KOLB, I. N. Blanchard
MCCURDY, W. C. Purcell
ROYSTER, R. L. Purcell

McCURTAIN

BARKER, N. L. Broken Bow
CLARKSON, A. W. Valliant
HALL, LYMAN S. Broken Bow
MORELAND, J. T. Idabel
MORELAND, W. A. Idabel
SHERRILL, R. H. Broken Bow
WILLIAMS, R. D. Idabel

McINTOSH

JACOBS, L. I. Hanna
LEE, N. P. Checotah
LITTLE, D. E. Eufaula
SMITH, F. L. Eufaula
TOLLESON, W. A. Eufaula
WOOD, JAS. L. Eufaula

MURRAY

ANADOWN, P. V. Sulphur
BAILEY, H. C. Sulphur
BALL, ERNEST Sulphur
BURKE, RICHARD M. Sulphur
DUNHAM, H. C. Sulphur
LUSTER, J. C. Davis
POWELL, W. H. Sulphur
SADLER, F. E. Sulphur
SHIVERS, E. E. Davis
SLOVER, GEO. Sulphur
SPOUSE, O. W. Sulphur

MUSKOGEE

BALLANTINE, H. T. Surety Bldg.
BERRY, W. D. Barnes Bldg.
BLAKEMORE, J. L. Barnes Bldg.
BALLANCE, R. A. Webber Falls
BURNS, H. C. Warner
BRUTON, L. D. Commercial Natl. Bldg.
BRYAN, CECIL Vian
CAMPBELL, J. F. Barnes Bldg.
COACHMAN, E. H. Manhattan Bldg.
DE GROOT, C. E. Manhattan Bldg.
DONNELL, R. N. Raymond Bldg.

DORWART, F. G.	Barnes Bldg.
EARNEST, A. N.	Barnes Bldg.
EVERLY, A. W.	Equity Bldg.
EWING, F. W.	Surety Bldg.
FITE, E. H.	Barnes Bldg.
FITE, W. P.	Barnes Bldg.
FRYER, S. J.	Surety Bldg.
FULLENWIDER, C. M.	Barnes Bldg.
GRAVES, J. R.	Boynton
HAMM, S. G.	Haskell
*HARROD, R. T.	Oktaha
HEITZMAN, C. W.	Barnes Bldg.
HOLCOMB, R. N.	Surety Bldg.
JOBLIN, W. R.	Porter
KAISER, GEO. L.	Checotah
KLASS, O. C.	Surety Bldg.
KUPKA, J. F.	Haskell
McALISTER, L. S.	Barnes Bldg.
MOBLEY, A. L., Vets. Facility, Albuquerque, N. M.	
NEELY, S. D.	Commercial Natl. Bldg.
NEUHAUSER, MAYER	Vet. Hosp., Muskogee
NICHOLS, J. T.	Equity Bldg.
NOBLE, JOS. G.	1400 E. Okmulgee
OLDHAM, Sr., I. B.	426 North Sixth
OLDHAM, Jr., I. B.	426 North Sixth
OSGOOD, W. W.	Equity Bldg.
RAFTER, J. G.	Manhattan Bldg.
REYNOLDS, JOHN	First Natl. Bldg.
RICE, C. V.	1620 West Okmulgee
SANSING, CAMPBELL, Vet. Hospital, Muskogee	
SCOTT, H. A.	Commercial Natl. Bldg.
THOMAS, L. M.	Webber Falls
THOMPSON, M. K.	Surety Bldg.
TILTON, W. B.	Vet. Hospital, Muskogee
WALLIS, G. F.	Fort Gibson
WATERFIELD, F. E.	Commercial Natl. Bldg.
WHITE, C. E.	562 North Sixth
WHITE, J. H.	Surety Bldg.
WILKEMEYER, F. J.	Vet. Hospital, Muskogee
WOLFE, I. C.	426 North Sixth
WOODBURN, J. T.	Surety Bldg.
WOODNICK, GEO. W.	Vet. Facility, Muskogee

NOBLE

COOKE, C. H.	Perry
EVANS, A. M.	Perry
FRANCIS, J. W.	Perry
RENFROW, T. F.	Billings

NOWATA

LANG, S. A.	Nowata
PRENTISS, H. M.	Nowata
ROBERTS, S. P.	Nowata
SCOTT, M. B.	Delaware
SUDDERETH, J. P.	Nowata

OKFUSKEE

ADAMS, ALLEN C.	Elk City
BARTOW, A. C.	Okfuskee
BLOSS, C. M.	Okemah
BOMBARGER, C. C.	Paden
BRICE, M. O.	Okemah
COCHRAN, C. M.	Okemah
DOVELL, J. C.	Paden
JENKINS, W. P.	Okemah
KENNEDY, J. A.	Okemah
KEYES, ROBERT	La Mesa, Calif.
LUCAS, A. C.	Castle
MELTON, A. S.	Okemah
PEMBERTON, J. M.	217½ West Commerce Oklahoma City
PRESTON, J. R.	Weleetka
SPICKARD, L. J.	Okemah

*Deceased

OKLAHOMA

ADAMS, ROBT. H.	501 Ramsey Tower
AKIN, R. H.	400 West Tenth St.
ALFORD, J. M.	Medical Arts Bldg.
ALLEN, E. P.	1200 North Walker
ALLEN, GEO. T.	Osler Bldg.
ANDREWS, LELIA E.	1200 North Walker
ARRINGTON, C. T.	805 North Walnut
BAILEY, F. M.	Minco
BAILEY, WILLIAM H.	301 West Twelfth St.
BAIRD, W. D.	2519½ South Robinson
BALYEAT, RAY M.	1200 North Walker
BARKER, CHAS. E.	505-13 Osler Bldg.
BARB, THOS. J.	240 West Commerce
BATES, C. E.	Federal Bldg.
BACHELOR, J. J.	Medical Arts Bldg.
BERRY, C. N.	Medical Arts Bldg.
BEYER, M. R.	2006 North West 39th St.
BINKLEY, JAMES G.	Medical Arts Bldg.
BINKLEY, J. SAM	Medical Arts Bldg.
BLACHLEY, C. D.	126 North East 8th St.
BLACHLEY, LUCILLE S., 126 North East 8th St.	
BOATRIGT, LLOYD C.	Perrine Bldg.
BONDURANT, C. P.	Medical Arts Bldg.
BOLEND, REX	Medical Arts Bldg.
BOGGS, NATHAN	Perrine Bldg.
BONHAM, WM. L.	Medical Arts Bldg.
BORECKY, GEORGE L.	Ramsey Tower
BOWEN, RALPH	1200 North Walker
BRADLEY, H. C.	Perrine Bldg.
BRANHAM, D. W.	301 West Twelfth St.
BREWER, A. M.	Perrine Bldg.
BROWN, G. W.	Medical Arts Bldg.
BRUNDAGE, C. L.	1200 North Walker
BUCHANAN, THOS. A., American Natl. Bank Bldg.	
BURTON, JOHN F.	Osler Bldg.
BUTLER, H. W.	1200 North Walker
CAILEY, LEO F.	Medical Arts Bldg.
CAMPBELL, COYNE H.	Medical Arts Bldg.
CANADA, J. C.	216½ West Commerce
CATES, ALBERT	Medical Arts Bldg.
CAVINESS, J. J.	Medical Arts Bldg.
CHARNEY, L. H.	Medical Arts Bldg.
CHASE, A. B.	Colcord Bldg.
CLARK, ANSON L.	Medical Arts Bldg.
CLOUDMAN, H. H.	Medical Arts Bldg.
CLYMER, CYRIL E.	Medical Arts Bldg.
COLEY, A. J.	Hightower Bldg.
COLLINS, H. D.	Medical Arts Bldg.
COOPER, F. M.	Medical Arts Bldg.
CUNNINGHAM, S. R.	Medical Arts Bldg.
DAILY, H. J.	Medical Arts Bldg.
DICKSON, GREEN K.	1200 North Walker
DAVIS, C. E.	Medical Arts Bldg.
DAVIS, E. P.	918 North West 23rd St.
DEMAND, F. A.	1200 North Walker
DERSCH, WALTER H.	Medical Arts Bldg.
DILL, FRANCIS E.	Medical Arts Bldg.
DOWDY, THOS. W.	Medical Arts Bldg.
DOUGHERTY, VIRGIL T., Gorel, Abyssinia, Africa	
DUNCAN, D. G.	Medical Arts Bldg.
EARLY, R. O.	Medical Arts Bldg.
EASTLAND, WM. E.	Medical Arts Bldg.
ELEY, N. P.	400 West Tenth St.
EMENHEISER, LEE K.	Washington University, St. Louis, Mo.
EPLEY, C. O.	418 Osler Bldg.
ESKRIDGE, J. B.	1200 North Walker
ERWIN, F. B.	Medical Arts Bldg.
FAGIN, HERMAN	400 West Tenth St.
FARIS, BRUNEL D.	Medical Arts Bldg.
FERGUSON, E. G.	Medical Arts Bldg.
FERGUSON, E. S.	Medical Arts Bldg.
FISHMAN, C. J.	132 West Fourth St.
FITZ, R. G., Taming Fu Hoppi, Prov. No. China	
FLESHER, THOS. H.	Edmond
FRIERSON, S. E.	Medical Arts Bldg.

FRYER, S. R.	119 West Fifth St.	MARGO, E.	717 North Robinson St.
FULTON, CLIFFORD C.	Medical Arts Bldg.	MARTIN, J. T.	1200 North Walker
FULTON, GEO. S.	American Natl. Bank Bldg.	MARTIN, HOWARD	Ramsey Tower
GARRISON, GEO. H.	1200 North Walker	McBRIDE, E. D.	717 North Robinson
GEE, O. J.	Medical Arts Bldg.	McGEE, J. P.	404 Osler Bldg.
GIBBS, ALLEN G.	Ramsey Tower	McHENRY, D. D.	508 North West 15th St.
GLOMSET, JOHN L.	621 Osler Bldg.	McHENRY, L. C.	Medical Arts Bldg.
GOLDFAIN, E.	717 North Robinson	McKINNEY, MILAN	Medical Arts Bldg.
GOODWIN, R. Q.	Medical Arts Bldg.	McLAUGHLIN, J. R.	Medical Arts Bldg.
GRAHAM, ALLISON T.	104 West Commerce	McNEILL, PHIL M.	Medical Arts Bldg.
GRAY, J. WORTH	1315 South Agnew	MECHLING, GEO. S.	Osler Bldg.
GUTHRIE, A. L.	1200 North Walker	MESSENBAUGH, J. F.	Colcord Bldg.
GREGORY, M. S.	Medical Arts Bldg.	MILES, W. H.	City Hall Bldg.
HALL, CLARK H.	Medical Arts Bldg.	MILLER, N. L.	Medical Arts Bldg.
HANEY, A. H.	Perrine Bldg.	MILLS, R. C.	City Hall Bldg.
HAMMONDS, O. O.	623 North East 18th St.	MOFFITT, JOHN A.	University Hospital
HARBISON, FRANK	Terminal Bldg.	MOORE, ELLIS	Medical Arts Bldg.
HARBISON, J. E.	Terminal Bldg.	MOORE, C. D.	Perrine Bldg.
HARRIS, H. W.	1200 North Walker	MOORE, H. D.	800 East Thirtieth St.
HASKETT, PAUL E.	Hales Bldg.	MOORMAN, FLOYD	1200 North Walker
HAYES, BASIL A.	Osler Bldg.	MOORMAN, L. J.	1200 North Walker
HATCHETT, J. A.	Medical Arts Bldg.	MORGAN, C. A.	First Natl. Bldg.
HAZEL, O. G.	Medical Arts Bldg.	MORLEDGE, WALKER	Osler Bldg.
HEATLEY, JOHN E.	Medical Arts Bldg.	MORRISON, H. C.	807 North West 23rd St.
HERMANN, JESS	Medical Arts Bldg.	MOTH, M. V.	American Bldg.
HETHERINGTON, A. J.	2014 Gatewood Ave.	MULVEY, BERT E.	Medical Arts Bldg.
HICKS, F. B.	Medical Arts Bldg.	MURDOCH, R. L.	Medical Arts Bldg.
HIRSCHFIELD, A. C.	Medical Arts Bldg.	MUSICK, ELMER R.	Medical Arts Bldg.
HOLLIDAY, J. R.	1200 North Walker	MUSICK, V. H.	217½ West Commerce
HOOD, F. REDDING	1200 North Walker	MUSSIL, W. M.	Medical Arts Bldg.
HOWARD, ROBT. L.	1200 North Walker	MYERS, RALPH	1200 North Walker
HOWARD, R. M.	Osler Bldg.	NAGLE, PATRICK	Medical Arts Bldg.
HUNTER, GEO. W.	Wewoka	NICHOLSON, B. H.	300 West Twelfth St.
HUGGINS, J. R.	Box 127, Clinton	NIELSEN, GERTRUDE	1200 North Walker
HYROOP, GILBERT L.	Medical Arts Bldg.	O'DONOGHUE, D. H.	Medical Arts Bldg.
JACKSON, A. R.	2528½ South Robinson	PADBERG, J. W.	1800 West 16th St.
JACOBS, MINARD F.	Medical Arts Bldg.	PATTERSON, ROBT. U.	520 North West 34th St.
JANCO, LEON	10 West Park Place	PAULUS, D. D.	301 West Twelfth St.
JETER, HUGH	1200 North Walker	PENICK, GRIDER	Colcord Bldg.
JOBIE, VIRGIL R.	Capitol Bldg.	PELPHS, A. S.	Medical Arts Bldg.
JOLLY, W. J.	614 West 14th St.	PINE, JOHN S.	Medical Arts Bldg.
JONES, HUGH C.	Medical Arts Bldg.	POINTS, BLAIR	Luther
KAHLE, C. E.	1738 North West 16th St.	POSTELLE, J. M.	Medical Arts Bldg.
KELLER, W. F.	Medical Arts Bldg.	POUNDERS, CARROLL M.	1200 North Walker
KELSO, J.	Medical Arts Bldg.	PRICE, J. S.	1200 North Walker
KELTZ, BERT F.	Medical Arts Bldg.	RECK, J. A.	Colcord Bldg.
KERNODLE, S. E.	First Natl. Bldg.	REED, EMIL P.	1200 North Walker
KIMBALL, G. H.	Ramsey Tower	REED, HORACE	Osler Bldg.
KIMBALL, MELVIN	Medical Arts Bldg.	REED, JAMES ROBERT	Medical Arts Bldg.
KUHN, JOHN F.	Medical Arts Bldg.	REICHMAN, RUTH S.	124 North West 15th St.
KUHN, Jr., JOHN F.	Medical Arts Bldg.	RIELY, LEA A.	Medical Arts Bldg.
LAIN, E. S.	Medical Arts Bldg.	RILEY, J. W.	119 West Fifth St.
LAMB, JOHN H.	Medical Arts Bldg.	ROBINSON, J. H.	301 West Twelfth St.
LAMBKE, PHIL M.	1220 South East 29th St.	RODDY, JOHN A.	1117 Ramsey Tower
LA MOTTE, GEORGE A.	Colcord Bldg.	RODDY, JOHN A.	Ramsey Tower
LANE, L. C.	311½ North West Ninth St.	ROSENBERGER, F. E.	Perrine Bldg.
LANGSFORD, WM.	328 East Eleventh St.	ROUNTREE, C. R.	1200 North Walker
LANGSTON, WANN	Medical Arts Bldg.	RUCKS, Jr., W. W.	300 West Twelfth St.
LAWSON, N. E.	1616 West 26th St.	RUCKS, W. W.	300 West Twelfth St.
LAWSON, PAT	Medical Arts Bldg.	RUHL, A. M.	Edmond
LEE, CLARENCE	Hightower Bldg.	SALOMON, A. L.	1200 North Walker
LENEY, FANNIE LOU	400 West Tenth St.	SADLER, LEROY H.	Osler Bldg.
LEMON, CECIL W.	Medical Arts Bldg.	SANDS, A. J.	Choctaw
LEONARD, C. E.	Medical Arts Bldg.	SANGER, WINNIE M.	Key Bldg.
LEWIS, A. R.	Hightower Bldg.	SANGER, F. M.	Key Bldg.
LINGENFELTER, F. M.	1200 North Walker	SANGER, F. A.	Key Bldg.
LITTLE, JOHN R.	Ramsey Tower	SERVER, MILTON	1200 North Walker
LONG, LEROY	Medical Arts Bldg.	SEWELL, DAN R.	400 North West Tenth St.
LONG, LEROY D.	Medical Arts Bldg.	SEYLER, L. EVERETT	1200 North Walker
LONG, ROSS D.	617 West 14th St.	SHELTON, J. W.	Medical Arts Bldg.
LONG, WENDELL	Medical Arts Bldg.	SHEPPARD, MARY V. S.	1200 North Walker
LOVE, R. S.	Perrine Bldg.	SMITH, CHAS. A.	Medical Arts Bldg.
LOWRY, DICK	1200 North Walker	SMITH, D. G.	Medical Arts Bldg.
LOWRY, TOM	1200 North Walker	SMITH, WENDELL L.	Medical Arts Bldg.
LOY, C. F.	Perrine Bldg.	SNOW, J. B.	1200 North Walker
LYON, J. I.	Edmond	STARRY, L. J.	1200 North Walker
MacCABE, R. S.	Medical Arts Bldg.	STILWELL, ROBT. J.	American Natl. Bldg.
MacDONALD, J. C.	300 West Twelfth St.	STONE, S. N.	Edmond

STOUT, M. E. 209 West Thirteenth St.
 STRADER, S. E. Hightower Bldg.
 STANBRO, G. E. Medical Arts Bldg.
 STROTHER, S. P. 120 North West 23rd St.
 SULLIVAN, ELIJAH S. Medical Arts Bldg.
 SULLIVAN, ERNEST Hightower Bldg.
 TABOR, GEO. R. First National Bank
 TAYLOR, C. B. Medical Arts Bldg.
 TAYLOR, W. M. 1200 North Walker
 THOMPSON, W. J. Osler Bldg.
 TODD, H. C. Colcord Bldg.
 TOOL, DONOVAN Edmond
 TOWNSEND, CARY Medical Arts Bldg.
 TRICE, S. T. 943 North West Thirteenth St.
 TURNER, HENRY H. 1200 North Walker
 UNDERWOOD, E. L. Hales Bldg.
 VALBERG, ERNEST Perrine Bldg.
 WAILS, T. G. Medical Arts Bldg.
 WARMACK, J. C. 200 North West 16th St.
 WATSON, O. ALTON 400 West Tenth St.
 WATSON, R. D. Britton
 WEIR, MARSHALL W. Ramsey Tower
 WEDEL, CURT VON 610 North West Ninth St.
 WELLS, EVA Medical Arts Bldg.
 WELLS, WALTER A. Medical Arts Bldg.
 WEST, W. K. 1200 North Walker
 WESTFALL, L. M. Medical Arts Bldg.
 WHITE, ARTHUR W. Medical Arts Bldg.
 WHITE, OSCAR P. 1200 North Walker
 WHITE, PHIL Perrine Bldg.
 WILDMAN, S. F. Medical Arts Bldg.
 WILKINS, HARRY Medical Arts Bldg.
 WILLIAMS, L. C. Osler Bldg.
 WILLIAMSON, W. H. First Natl. Bldg.
 WILSON, E. C. 1001 NorthEast 20th St.
 WILSON, KENNETH J. Medical Arts Bldg.
 WOLFF, J. P. Osler Bldg.
 WOODWARD, NEIL W. 1200 North Walker
 WRIGHT, HARPER 240 West Commerce
 YEAKEL, E. L. 406 Savings Bldg.

OKMULGEE

ALEXANDER, LIN Okmulgee
 ALEXANDER, ROBT. L. Okmulgee
 ALEXANDER, T. C., C.C.C. Hdq., Phoenix, Ariz.
 BOLLINGER, I. W. Henryetta
 BOSWELL, H. D. Henryetta
 CARLOSS, T. C. Morris
 CARNELL, M. D. Okmulgee
 CONN, L. D. Box 186, Del Rio, Texas
 COTTERAL, J. R. Okmulgee
 *COTT, W. M. Okmulgee
 EDWARDS, J. G. Okmulgee
 GLISMANN, M. B. Okmulgee
 HOLMES, A. R. Henryetta
 KILPATRICK, G. A. Henryetta
 LESLIE, S. B. Okmulgee
 MABEN, CHAS. S. Okmulgee
 MATHENEY, J. C. Okmulgee
 MCKINNEY, G. Y. Henryetta
 MING, C. M. Okmulgee
 MITCHENER, W. C. Okmulgee
 NELSON, J. P. Beggs
 RAINS, H. L. Okmulgee
 RANDEL, D. M. Okmulgee
 RANDELL, H. O. Okmulgee
 *REMBERT, J. C. Okmulgee
 ROBINSON, J. C. Henryetta
 RODDA, E. D. Okmulgee
 SIMPSON, N. N. Henryetta
 STARK, W. W. 717 N. Robinson, Oklahoma City
 TORRANCE, L. B. Okmulgee
 VERNON, W. C. Okmulgee
 WALLACE, V. M. Morris
 WATSON, F. S. Okmulgee

WATSON, W. S. Okmulgee
 *WIDENER, DEAN C. Okmulgee

OSAGE

AARON, W. H. Pawhuska
 BAYLOR, R. A. Fairfax
 CATON, C. N. Wynona
 DALY, J. F. Pawhuska
 DOZIER, B. E. Snidler
 GOVAN, T. P. Pawhuska
 GUILD, C. H. Shidler
 HEMPHILL, G. K. Pawhuska
 HEMPHILL, P. H. Pawhuska
 KARASEK, M. Shidler
 KEYES, E. C. Shidler
 LIPE, E. N. Fairfax
 LOGAN, C. K. Hominy
 RAGAN, T. A. Fairfax
 RUST, M. E. Pawhuska
 SMITH, R. O. Hominy
 SULLIVAN, B. F. Barnsdall
 SUMMERS, H. L. Marion, Ill.
 WALKER, G. I. Hominy
 WALKER, ROSCOE Pawhuska
 WEIRICH, C. R. Pawhuska
 WORTEN, D. Pawhuska

OTTAWA

AISENSTADT, E. ALBERT Picher
 BARRY, J. R. Picher
 BUTLER, V. V. Picher
 CANNON, R. F. Miami
 CHESNUT, W. G. Miami
 COLVERT, G. W. Miami
 CONNELL, MATT Picher
 COOTER, A. M. Miami
 CRAIG, J. W. Miami
 CUNNINGHAM, P. J. Miami
 DeARMAN, M. M. Miami
 DeTAR, G. A. Miami
 DOLAN, W. M. Picher
 GRAY, C. M. Miami
 HAMPTON, J. B. Commerce
 HUGHES, A. R. Wyandotte
 JACOBS, J. C. Miami
 JACOBY, J. S. Commerce
 KERR, W. C. Picher
 KITCHEN, J. C. Afton
 LIGHTFOOT, J. B. Miami
 McNAUGHTON, G. P. Miami
 MILLER, H. K. Fairland
 PHILLIPS, ISAAC Picher
 PINNELL, GENERAL Miami
 RALSTON, B. W. Commerce
 RITCHEY, H. C. Picher
 RUSSELL, RICHARD Picher
 SHELTON, B. W. Miami
 SMITH, W. B. Fairland
 WORMINGTON, F. L. Miami

PAWNEE

BEITMEN, C. E. Kendrick
 BROWNING, R. L. Pawnee
 CARMICHAEL, M. M. Jennings
 HETHERINGTON, L. P. Pawnee
 JONES, R. E. Pawnee
 LeHEW, ELTON W. Pawnee
 LeHEW, J. L. Pawnee
 ROBINSON, E. T. Cleveland
 SADDORIS, M. L. Cleveland
 SPALDING, H. B. Ralston

*Deceased

PAYNE

ADAMS, JAMES E.	Cushing
BASSETT, C. M.	Cushing
BEACH, C. H.	Glencoe
CLEVERDON, L. A.	Stillwater
DAVIS, BENJ.	Cushing
FRIEDMANN, P. W.	5842 Harper Ave., Chicago
FRY, POWELL E.	Stillwater
HARRIS, E. M.	Cushing
HERRINGTON, D. J.	Cushing
HOLBROOK, R. W.	Perkins
LEATHEROCK, R. E.	Cushing
LOVE, T. A.	Ripley
MANNING, H. C.	Cushing
MARTIN, EMMETT O.	Cushing
MARTIN, JOHN F.	Stillwater
MARTIN, J. W.	Cushing
MITCHELL, L. A.	Stillwater
PHILLIPS, J. W.	Oilton
RICHARDSON, P. M.	Cushing
ROBERTS, R. E.	Stillwater
SMITH, A. B.	Stillwater
STRAHN, EVA	Stillwater
WAGGONER, ROY E.	Stillwater
WALTRIP, J. R.	Yale
WILHITE, L. R.	Perkins

PITTSBURG

BARTHELD, F. T.	McAlester
BAUM, F. J.	McAlester
BRIGHT, J. B.	Kiowa
BRONSON, C. J.	McAlester
BUNN, A. D.	Savanna
BUSSEY, H. N., 2043 West 23rd St., Oklahoma City	
DORROUGH, JOE	McAlester
GEORGE, L. J.	Stuart
GREENBERGER, E. D.	McAlester
HAILEY, W. P.	Haileyville
HARRIS, C. T.	Kiowa
KIES, B. B.	McAlester
KILPATRICK, G. A.	McAlester
KLOTZ, WM. F.	McAlester
KUYRKENDALL, L. C.	McAlester
LIVELY, CLAUDE E.	McAlester
MCCARLEY, T. H.	McAlester
MILLER, F. A.	Hartshorne
MILLS, CHAS. K.	McAlester
MUNN, J. A.	McAlester
NORRIS, T. T.	Krebs
PALMER, CLARA	McAlester
PARK, J. F.	McAlester
PEARCE, C. M., State Capitol Bldg., Oklahoma City	
PEMBERTON, R. K.	McAlester
RAMSEY, W. G.	Quinton
RICE, O. W.	McAlester
RUSSELL, ALLEN R.	McAlester
SAMES, W. W.	Hartshorne
SHULLER, E. H.	McAlester
THOMAS, ERNEST	Quinton
WELCH, A. J.	McAlester
WILLIAMS, C. O.	McAlester
WILLOUR, L. S.	McAlester
WILSON, HERBERT A.	McAlester
WILSON, McCLELLAND	McAlester

PONTOTOC

BRECO, DAVIS	Ada
BRECO, J. G.	Ada
BRYDIA, CATHERINE	Ada
BURROWS, L. I.	Ada
CANADA, E. A.	Ada
CRAIG, JOHN R.	Ada
CUMMINGS, ISHAM L.	Ada
DAWSON, B. B.	Ada
DEAN, W. F.	Ada
GULLATT, E. M.	Ada

HINES, SIDNEY, J. T.	Fittstown
HOLLOWAY, THOS. R.	Stonewall
KING, RICHARD F.	Ada
LANE, WILSON H.	Ada
LEWIS, E. F.	Ada
LEWIS, MILES L.	Ada
McKEEL, SAM A.	Ada
McNEW, M. C.	Ada
MILLER, OSCAR H.	Ada
MOREY, JOHN B.	Ada
NEEDHAM, C. F.	Ada
PAULSON, GEORGE A.	Ada
PETERSON, WM. G.	Ada
ROSS, SAMUEL P.	Ada
RUTLEDGE, JAS. A.	Ada
SEABORN, T. L.	Roff
SUGG, ALFRED R.	Ada
THRELKELD, WM. R.	Ada
WEBSTER, M. M.	Ada
WELBORN, ORANGE E.	Ada

POTTAWATOMIE

ANDERSON, R. M.	Shawnee
APPLEWHITE, G. H.	Shawnee
BAKER, M. A.	Shawnee
BALL, W. A.	Wanette
BAXTER, G. S.	Shawnee
BLOUNT, W. T.	Maud
BROWN, R. A.	Prague
BYRUM, J. M.	Shawnee
CAMPBELL, H. G.	St. Louis, Okla.
CARSON, F. L.	Shawnee
CORDELL, U. S.	McComb
CULBERTSON, R. R.	Maud
CULLUM, J. E.	Earlsboro
FORTSON, J. L.	Tecumseh
GALLAHER, F. C.	Shawnee
GALLAHER, W. M.	Shawnee
GASTON, JOHN I.	Shawnee
GILICK, D. W.	Shawnee
HUGHES, H. E.	Shawnee
HUGHES, J. E.	Shawnee
KAYLOR, R. C.	McCloud
KEEN, FRANK M.	Shawnee
MATTHEWS, W. F.	Tecumseh
McFARLING, A. C.	Shawnee
McADAMS, WM. ALPHA	Shawnee
NEWLIN, FRANCES P.	Shawnee
PARAMORE, C. F.	Shawnee
RICE, E. E.	Shawnee
ROWLAND, T. D.	Shawnee
ROYSTER, J. H.	Wanette
STEVENS, WALTER S., 315 P. O. Bldg., Okla. City	
STOOKSBURY, J. M.	Shawnee
*WAGNER, H. A.	Shawnee
WALKER, J. A.	Shawnee
*WALKER, J. E.	Shawnee

PUSHMATAHA

BURNETT, J. A.	Waldron, Ark.
CONNALLY, D. W.	Antlers
GUINN, E.	Antlers
HUCKABAY, B. M.	Greenville, Tex.
JOHNSON, H. C.	Antlers
KIRKPATRICK, J.	Tuskahoma
LAWSON, JOHN S.	Antlers
PATTERSON, E. S.	Antlers

ROGERS

ANDERSON, F. A.	Claremore
ARNOLD, A. M.	Claremore
BASSMAN, CAROLINE	Claremore
BESON, C. W.	Claremore

*Deceased

BUSHYHEAD, J. C.	Claremore
COLLINS, B. F.	Claremore
HAYS, W. F.	Claremore
HOWARD, W. A.	Chelsea
JENNINGS, K. D.	Chelsea
MASON, W. S.	Claremore
MELOY, R. C.	Claremore
NELSON, D. C.	Claremore

SEMINOLE

BRIGGS, T. H.	Wewoka
CHAMBERS, C. S.	Seminole
DEATON, A. N.	Wewoka
GIESEN, A. F.	Konawa
GRIMES, J. P.	Wewoka
HACKLER, J. F.	Seminole
HARBOR, J. N.	Seminole
HARRISON, T. F.	Wewoka
HARTSHORNE, W. O.	Cromwell
KNIGHT, W. L.	Wewoka
MARTIN, W. S.	Wewoka
McGOVERN, J. D.	Wewoka
MILLS, N. W.	Snomac
MOSHER, D. D.	Seminole
PACE, L. R.	Seminole
PIERSON, D. D.	Konowa
SCOTT, T. A.	Bowlegs
STEPHENS, A. B.	Seminole
THROGMORTON, H. B.	Seminole
TURLINGTON, M. M.	Seminole
VAN SANDT, G. B.	Wewoka
VAN SANDT, M. M.	Wewoka
WALKER, A. A.	Wewoka
WARE, T. H.	Seminole

SEQUOYAH

MORROW, J. A.	Sallisaw
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STEPHENS

BREWER, J. R.	Marlow
BURNETT, B. H.	Duncan
CARMICHAEL, J. B.	Duncan
DOWNING, G. G.	Marlow
HARRISON, C. M.	Comanche
IVY, W. S.	Duncan
KING, E. G.	Duncan
LINDLEY, E. C.	Duncan
LINZY, J. H.	Comanche
*LONG, D.	Duncan
McCLAIN, W. Z.	Marlow
McMAHAN, A. M.	Duncan
NIEWEG, J. W.	Route 4, Shawnee
OVERTON, L. M.	Shawnee
PATTERSON, J. L.	Duncan
PRUITT, C. C.	Comanche
RICHARDSON, R. W.	Duncan
SALMON, W. T.	Duncan
SMITH, L. P.	Marlow
TALLEY, C. N.	Marlow
THOMASON, E. B.	Marlow
WEEDN, A. J.	Duncan
WILLIAMSON, S. H.	Duncan

TEXAS

HAYES, R. B.	Guymon
LEE, DANIEL S.	Guymon
REED, PAUL	Texhoma
SMITH, MORRIS	Guymon
THURSTON, HARRY E.	Texhoma

TILLMAN

ALLEN, C. C.	Frederick
ARRINGTON, J. E.	Frederick
BACON, O. G.	Frederick

CHILDERS, J. E.	Tipton
DAVIS, W.	Davidson
FISHER, R. L.	Frederick
FUQUE, W. A.	Grandfield
OSBORN, JR., JAMES D.	Frederick
REYNOLDS, J. C.	Frederick
SPURGEON, T. F.	Frederick

TULSA

ALLEN, V. K.	1001 Medical Arts Bldg.
ALLISON, T. P.	Sand Springs
ARMSTRONG, O. C.	912 Medical Arts Bldg.
AMENT, C. M.	305 Ritz Bldg.
ATCHLEY, R. Q.	507 Medical Arts Bldg.
ATKINS, PAUL N.	1011 Medical Arts Bldg.
BARHAM, J. H.	314 New Daniel Bldg.
BEESELEY, W. W.	501 Medical Arts Bldg.
BEYER, J. W.	501 Palace Bldg.
BILLINGTON, J. J.	404 Medical Arts Bldg.
BLACK, HAROLD J.	209 Medical Arts Bldg.
BOLTON, J. F.	211 Medical Arts Bldg.
BRADFIELD, S. J.	607 Medical Arts Bldg.
BRADLEY, C. E.	202 Medical Arts Bldg.
BRANLEY, BERNARD L.	315 Medical Arts Bldg.
BRASWELL, JAS. C.	1109 Medical Arts Bldg.
BROGDEN, J. C.	414-15 Medical Arts Bldg.
BROOKSHIRE, J. E.	313 Ritz Bldg.
BROWN, H. S.	615 Medical Arts Bldg.
BRYAN, Jr., W. J.	8 Medical Arts Bldg.
CALHOUN, C. E.	Sand Springs
CALHOUN, WALTER H.	1010 Daniels Bldg.
CALLAHAN, H. W.	902 Medical Arts Bldg.
CAMPBELL, W. M.	1301½ East 15th St.
CARNEY, A. B.	Atlas Life Bldg
CHALMERS, J. S.	Sand Springs
CHARBONNET, P. N.	Medical Arts Bldg.
CHILDS, D. B.	1226 South Boston
CHILDS, HENRY C.	1226 South Boston
CHILDS, J. W.	1226 South Boston
CLINTON, FRED S.	823 Wright Bldg.
COHENOUR, E. L.	1102 Medical Arts Bldg.
CLULOW, GEO. H.	410 McBirney Bldg.
COOK, ALBERT W.	1006 Medical Arts Bldg.
COULTER, T. B.	1011 Medical Arts Bldg.
CRAWFORD, WM. S.	1732 South Yorktown
CRONK, FRED Y.	801-05 Medical Arts Bldg.
DAILY, R. E.	Bixby
DAVIS, A. H.	710 Medical Arts Bldg.
DAVIS, T. H.	404 Medical Arts Bldg.
DEAN, W. A.	610 Medical Arts Bldg.
DENNY, E. R.	1105 Medical Arts Bldg.
DIEFFENBACH, N. J.	704 Medical Arts Bldg.
DILLON, C. A.	212 Daniel Bldg.
DUNLAP, ROY W.	808 Medical Arts Bldg.
EDWARDS, D. L.	1109 Medical Arts Bldg.
EMERSON, A. V.	212 Medical Arts Bldg.
EADS, CHAS H.	607 Medical Arts Bldg.
FARRIS, H. LEE	303 Medical Arts Bldg.
FLACK, F. L.	Natl. Bank of Tulsa Bldg.
FLANAGAN, O. A.	213 Medical Arts Bldg.
FORD, H. W.	417 Oklahoma Natl. Bank Bldg.
FULCHER, JOSEPH	417 Medical Arts Bldg.
GARABEDIAN, G.	1235 South Boulder Ave.
GARRETT, D. L.	701 Medical Arts Bldg.
*GEISSLER, P. C.	1643 Evanston St.
GILBERT, J. B.	Roberts Bldg.
GLASS, FRED A.	404 Medical Arts Bldg.
GODDARD, R. K.	Skiatook
GOODMAN, SAMUEL	603 Medical Arts Bldg.
GORRELL, J. FRANKLIN,	610 Medical Arts Bldg.
GRAHAM, H. C.	1501 South Baltimore
GREEN, HARRY	1116 Medical Arts Bldg.
GROSSHART, PAUL	302 Medical Arts Bldg.
HALL, G. H.	427 McBirney Bldg.
HARALSON, CHAS. H.	816 Medical Arts Bldg.

*Deceased

HARRIS, BUNN, Box 356, Jenks
 HART, M. M. 1232 South Boulder
 HART, M. O. 1232 South Boulder
 HASKINS, THOS. M. 814 Daniels Bldg.
 HAYS, LAVERNE 1001 Medical Arts Bldg.
 HENDERSON, F. W. 304 Medical Arts Bldg.
 HENLEY, M. D. 911 Medical Arts Bldg.
 HENRY, D. H. 801 Medical Arts Bldg.
 HENRY, G. H. 801 Medical Arts Bldg.
 HOKE, C. C. 207 Philtower Bldg.
 HOOPER, J. S. 518 West Fourth St.
 HOOVER, WILKIE D. 320 Philcade Bldg.
 HOTZ, CARL J. 604 South Cincinnati
 HOUSER, M. A. 606 Beacon Life Bldg.
 HUBER, WALTER A. 1113-14 Medical Arts Bldg.
 HUDSON, MARGARET G., 411 Medical Arts Bldg.
 HUDSON, DAVID V. 214 Medical Arts Bldg.
 HUMPHREY, B. H. Sperry
 HUTCHISON, A. Bixby
 HYATT, EMRY G. 604 South Cincinnati
 JACKSON, L. T. 206½ South Main
 JOHNSON, CHAS. D. 1117 Medical Arts Bldg.
 JOHNSON, R. R. Sand Springs
 JONES, W. M. 204 Medical Arts Bldg.
 KEMMERLY, H. P. 902 Medical Arts Bldg.
 KRAMER, A. C. 415 Medical Arts Bldg.
 LARRABEE, W. S. 411 Medical Arts Bldg.
 LAWS, J. H. Broken Arrow
 LEE, J. K. 210 Medical Arts Bldg.
 LeMASTER, D. W. 902 Medical Arts Bldg.
 LHEVINE, MORRIS B. 1007 Medical Arts Bldg.
 LONEY, W. R. R. 301 Medical Arts Bldg.
 LYNCH, T. J. Philcade Bldg.
 LOWE, J. O. Atlas Bldg.
 MacKENZIE, IAN 510 Medical Arts Bldg.
 MARGOLIN, B. 210 Medical Arts Bldg.
 MAYGINNIS, P. H. 505 Palace Bldg.
 McCOMB, L. A. 801 Medical Arts Bldg.
 McDONALD, D. M. 24 East 17th St.
 McDONALD, J. E. Medical Arts Bldg.
 McGILL, RALPH A. 1010 Medical Arts Bldg.
 McGUIRE, H. J. 910 Medical Arts Bldg.
 McKELLAR, MALCOLM 604 South Cincinnati
 McLEAN, B. W. Jenks
 McQUAKER, MOLLY 1648 East 13th St.
 MILLER, GEORGE H. 206 Atlas Bldg.
 MINER, J. L. 810 Medical Arts Bldg.
 MISHLER, DONALD L. 604 South Cincinnati
 MOHRMAN, SYLVESTER, 611 New Daniels Bldg.
 MUNDING, L. A. Medical Arts Bldg.
 MURDOCK, H. D. 1011 Medical Arts Bldg.
 MURRAY, P. G. 506 Medical Arts Bldg.
 MURRAY, SILAS 501 Medical Arts Bldg.
 MYERS, F. C. 502 Daniels Bldg.
 NAPPER, MARVIN L. Medical Arts Bldg.
 NAUHEIM, H. S. 511 Medical Arts Bldg.
 NEAL, JAMES H. 1944 North Denver Place
 NELSON, F. J. 603 Medical Arts Bldg.
 NELSON, F. L. 614 Daniels Bldg.
 NELSON, I. A. 1107 Medical Arts Bldg.
 NELSON, M. O. 307 Medical Arts Bldg.
 NESBITT, E. P. 917 Medical Arts Bldg.
 NESBITT, P. P. 917 Medical Arts Bldg.
 NORMAN, G. R. 17½ North Lewis
 NORTHROP, L. C. 410 McBirney Bldg.
 OSBORN, GEO. R. 1105 Medical Arts Bldg.
 PAYY, C. A. 801 Medical Arts Bldg.
 PEDEN, J. C. 612 Medical Arts Bldg.
 PERRY, HUGH, 416 McBirney Bldg.
 PIGFORD, A. W. 1001 Medical Arts Bldg.
 PIGFORD, R. C. 1001 Medical Arts Bldg.
 PORTER, H. H. 510 Medical Arts Bldg.
 PRESSON, L. C. 902 Medical Arts Bldg.
 PRICE, HARRY 407 Medical Arts Bldg.
 RAY, R. G. 402 Atlas Bldg.
 REESE, K. C. 1101 Medical Arts Bldg.
 REYNOLDS, J. L. 305 Palace Bldg.
 RHODES, R. E. LEE 509 Medical Arts Bldg.

RICHEY, S. M. 1304½ West 17th St.
 ROBERTS, T. R. 425 Wright Bldg.
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The Diagnosis and Treatment of Malignant Diseases of the Mouth*

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Successful treatment of malignant diseases of the mouth requires a comprehensive knowledge of tumor pathology, of radiation, and of surgery. The operator must always take into consideration the type of tumor with which he is dealing, the limitations of radiation and the limitations of surgery. There is considerable argument at the present time as to how some of these lesions should be treated. The final decision can only rest with the operator, the type of equipment at hand and the experience that he has had with the use of the different procedures. It would be unwise to attempt to treat all malignant lesions of the mouth with radiation and it is also impossible to attain the best results in all lesions by surgery.

In this paper I will attempt to outline my method of treating the different types of lesions in the different locations in the mouth. When I speak of external radiation I am referring to the use of x-rays generated at 200 kv., a filter of one-half mm. of copper and one mm. of aluminum at fifty cm. distance. When I speak of interstitial radiation I am referring to the use of the Treeves radium element needle containing 3.3 mgm. of radium in eleven mm. active length of needle with a filtration of one-half mm. of platinum. I realize that it would probably be superior to have my needles containing a smaller amount of radium but I was forced to compromise and this was the smallest amount of radium

possible to use when the use of the radium in other types of applicators was contemplated.

In the treatment of malignant conditions of the mouth by radiation I feel that the same principle is involved as in the treatment of malignant diseases by surgery and that is that the treatment must be radical enough when first given that a complete cure may be expected as a recurrence of disease following radiation as with surgery greatly jeopardizes the chances for a cure. When treatment is instituted it should be diligently applied so that a complete cure is obtained from the first series of treatment. The idea of administering a small amount of radiation and repeating it at infrequent intervals is entirely erroneous and good results can not be expected.

CARCINOMA OF THE LIP

We are all acquainted with the appearance of the small epithelioma on the lip which is usually of the squamous type, grade one or two and quite radio-resistant. In my experience the layman has also become acquainted and suspicious of this type of lesion and is coming in for treatment much earlier than he has in the past. I feel that it is necessary to make a biopsy on every case.

For the small lesion I use radium applicators made from dental compound, the radium arranged so that the lesion is cross-fired from three directions; one capsule being on the inside of the lip, one on

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the top of the lip, and one on the outside of the lip. The total dose is calculated to give between 75 and 80 mgm. hours per square cm. of treated area. This will produce quite a severe reaction in two to three weeks with complete healing in four or five weeks with a soft pliable unnoticeable scar.

In the larger lesions of the lip which have infiltrated into the substance of the lip I use a surface application as above described in conjunction with interstitial radiation with the needles from twenty-four to forty-eight hours. This will produce a much more severe reaction with complete healing but some noticeable scarring of the lip.

For the large infiltrative lesions which are rather rare at the present time I advise some type of surface radiation with surgery, the entire lip being removed and a reformation of the lower lip by a cheiloplasty.

METASTATIC GLANDS

The question as to whether radiation or surgery is preferable in the presence of metastatic involvement of the glands of the neck is one which has not been settled at the present time. It is a well known fact that the metastatic involvement from malignant diseases of the mouth occurs locally in a great proportion of cases and only rarely does a general metastasis occur. Therefore, consideration of the treatment of these glands is of prime importance. My feeling in the treatment of glands is that a neck dissection should not be attempted unless the following conditions prevail:

1. The primary lesion is entirely healed.
2. That metastasis is unilateral.
3. That the glands are freely movable and have not infiltrated through the capsules.
4. That the physical condition of the patient be such that he can withstand a rather formidable procedure.
5. That the tumor is not over grade two in type.

I feel that in any absence of the above requirements a neck dissection should not be done. In these cases I feel that the best results are obtained by adequate external radiation with exposure of the gland and

the radium needles inserted and placed under direct vision. Martin and Quimby have definitely shown that it requires a total dose of from seven to ten skin erythema doses of radiation for the complete destruction of the adult squamous carcinoma cells. Inasmuch as only two to four SED can be administered by external radiation it is necessary to give the balance interstitially so that the minimum amount of radiation received by any part of the diseased area shall be from seven to ten SED.

In the treatment of incurable metastatic involvement the amount of radiation should be greatly reduced to prevent the tumor mass from breaking down. Considerable regression can be obtained from external radiation alone and a great deal of temporary relief given.

TONGUE

In considering malignant diseases of the tongue one must keep in mind that the tongue contains many different types of epithelium. The tip and upper surface of the organ are covered with stratified squamous epithelium and from this area arises the most typical adult squamous carcinoma which is radio-resistant. Along the sides of the tongue and running into the floor of the mouth the cells are more of a transitional type and here one finds a transitional cell carcinoma which is usually more radio-sensitive. Along the base of the tongue there is much irregularity in structure owing to the lymphoid tissue, the deep crypts, and the mucous glands. Here one may encounter either a radio-resistant squamous lesion or a highly radio-sensitive lympho-epithelioma.

There is little doubt but what there is some relationship between syphilis and carcinoma of the tongue as a large number of people suffering from malignancies of the tongue have a positive Wassermann. It has also been shown that in the presence of a positive Wassermann the favorable results of treatment are greatly reduced. A biopsy and a Wassermann should be made on every case to determine the type of tumor and the possibility of specific infection.

In the treatment of a small lesion on the upper surface of the tongue I use fractionated doses of x-ray over a period of eigh-

teen to twenty days from two ports up to skin tolerance. By this method I am able to deliver between two and four SED to the lesion. In case there is a metastatic gland one port is arranged so that it passes through this gland. Upon completion of the external radiation the patient is removed to the hospital and the radium element needles are inserted so as to give from six to eight SED to the base of the tumor. If a gland is involved needles are embedded in the gland to give a lethal dose to all parts of the gland.

In large infiltrated infected tumors of the tongue external radiation should be applied followed by interstitial radium, followed by a ligation of the external carotid with a hemiglossectomy, the diseased portion of the tongue being used as a holder for the radium the operation being performed to remove the slough of infected tissue and thus prevent an aspiration pneumonia.

Tumors of the lateral border of the tongue and floor of the mouth if small can be treated in the same way as small tumors on the upper surface of the tongue with a fair prognosis. Statistics from the different cancer clinics have shown that the five-year cures of this method of treatment ran from twenty-five to thirty-six per cent.

The treatment of tumors at the base of the tongue requires an entirely different type of procedure. Surgery is impossible because of the location. Radiation is difficult because of the inaccessability but it is by far the method of choice. I, fortunately, have so far had none of these to treat. I feel that the best method of treatment is by heavy external radiation cross-fired from two or three positions followed by the insertion of gold radon seeds through the under surface of the chin, the seeds being placed under direct palpation of one finger on the base of the tongue from within the mouth.

CARCINOMA OF THE CHEEK

Malignant tumors of the inside of the cheek if well forward are usually of a radio-resistant type and require heavy treatment; if posterior, they may be of a radio-sensitive type which responds rapidly to external radiation. I feel that the lesion

should be cross-fired by external radiation followed by interstitial radiation, being careful that too much radiation is not given to cause a breaking down of the entire cheek. It may be possible to apply a surface applicator of radium made so as to screen the alveolar margins. Care must be used in placing interstitial radium too close to bone as an osteitis produced in this way is extremely painful and a condition from which recovery is very slow.

TONSILS

Malignant lesions of the tonsils are usually one of three types: a lympho-epithelioma; a lymphosarcoma; or of a transitional type. They are very malignant, grow rapidly, metastacize early, and are very radio-sensitive. In the treatment of this type of lesion heavy fractionated doses are given to skin tolerance with, as a rule, an almost complete regression of the primary lesion. This may be followed up by the use of a surface applicator of radium inside the mouth or by the insertion of gold radon seeds. Surgery in this type of lesion is impossible and a neck dissection for metastasis should not be considered. If metastasis does occur it should be treated by external radiation followed by interstitial radiation under direct vision.

In carcinoma of the roof of the mouth and the palate one must be content with some type of external radiation followed by a surface applicator against the lesion. At times it is possible to use gold seeds in the palate but as a rule the palate is too friable for the use of cumbersome radium element needles.

In this paper I have covered considerable ground and outlined fairly definite principles but when all is said and done each individual case must be considered unto itself and ways and means must be initiated to give adequate treatment to each and every part of the tumor.

Great advancement has been made in treatment of cancer of the mouth in the last decade. Fifteen years ago it was considered an incurable disease. At the present time, as I have referred to before, we are getting a twenty-five to thirty-six per cent five-year cure of malignancies in this location. Much depends on an early recog-

dition and early treatment. When it becomes general knowledge among doctors and laymen that cancer of the mouth is a

curable disease I am sure that we will see these cases much earlier and our statistics of absolute cures will materially rise.

A Study of Altered Kidney Position and Its Correction*

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In my own experience, weeks and months have often passed before a differential diagnosis could be made. The decision to resort to surgery has always been a slow one. A systematic examination, cautiously done, has in a few cases proven that pathology outside of the urinary tract was entirely responsible for symptoms and that renal ptosis and renal infection was only incidental. On the other hand, a distressing type of referred and direct pain, intermittent retention of urine, intractable pyelitis and pyelonephritis have been relieved, in certain instances, in a relatively short time, by nephropexy and a definitely planned post-operative convalescence.

From the time that Gilmore¹ performed a nephrectomy for renal ptosis during pregnancy in 1870, to the present time, many non-surgical and surgical treatments have been suggested. None have been universally accepted. These have ranged from corsets and girdles to gauze packs underneath and silver wires through the kidney structure, surgically. Hahn, in 1881, performed the first nephropexy. The exact technique was not described. Chambers, in 1901, stripped the capsule from the surface of the kidney to allow adhesions to form. Sturmdorf, in the same year, employed absorbable sutures. The use of chromic suspension sutures, through the true capsule, was reported in 1929 to 1933, by several authors, among whom were Foley,² Mathe,² Deming,³ Melen,⁷ Kidd,⁴ and others.

In 1923, Gallie and associates⁵ introduced the use of fascia lata living sutures

in the repair of the hernia. In 1933, Melen⁶ described a nephropexy using a fascia lata suspension sling, anchoring the fascia to the lower pole and bringing the two strips up to the twelfth rib over the upper pole. In 1934, Scholl altered this by passing the fascia under a tunnelling of the true capsule and bringing the upper strips together around the lateral aspect of the kidney and closing it across the upper part of the fascial closure of the wound. Lowsley, in 1935, used a ribbon gut in the same manner. Time will determine the value of the fascia lata in this connection. In my experience, a slight alteration of the fascia lata technique has been of easier application and given very satisfactory results. I use it because I can elevate the kidney higher than when passing the fascia lata over the upper pole, and do it with less disturbance of the suprarenal structures.

I now wish to study the differential diagnosis more carefully. Not all ptosed kidneys produce symptoms. Some are found only by accident. Others would give no symptoms, if not infected. When infected, the ptosis may or may not hinder recovery from the infection. A deliberate and thorough investigation is essential. The study neither begins nor ends with a complete cystoscopy, or even a complete urological examination. History is a very important element and should be carefully obtained. The patients often complain that frequency preceded or followed a costo-vertebral angle pain of sudden or gradual onset. In these cases some associated illness is usually described, such as tonsillitis, an attack of influenza, sinusitis, dental extraction, complicated pregnancy or gas-

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tro-intestinal disturbance just before the attack. Intermittent urination of altered type is frequent. Pain around the hip joint and down the leg is sometimes present. If the condition is of long duration, the patients are always neurotic. Some have lost weight and others have not. Relief by prone or Trendelenberg position is constant unless complicated by infection, aberrant blood vessels with hydronephrosis, calculus, or peri-ureteral adhesions. If any system reveals a definite focus for infection, including pulmonary tuberculosis and ulcerative colitis, it must be given due consideration in the pre-operative and post-operative treatment.

Special urological examination should include a complete study of all structures of, and adjacent to, the lower urinary tract, cultures of the urine, differential functional studies, retrograde pyelograms in the Trendelenberg and in the sitting position. I would like to stress the value of the Trendelenberg position for one set of pyelograms because it shows the lowest point of satisfactory fixation and may prevent tension on ureter or pedicle by exaggerated elevation of the kidney. Of course, exaggerated elevation is only a remote possibility but it is one just the same. Also, when the kidneys are as high as they can be placed I have seen cases in which ureters were too long. Obviously, post-operative results would be unsatisfactory if nephropexy alone were done in such cases. Also, one may determine by such pyelograms the relative necessity of disturbing the peri-ureteral tissues. Although some operators urge complete renal decapsulation and denervation of the pelvis and upper ureter, I cannot be sure that a delayed atonicity will not result from such a denervation. Unless it is essential to attempt to correct some adhesion or kink, I prefer not to do it. Intravenous pyelograms are valuable as a supplement. I use them to diagnose super-numerary kidneys. If these are not recognized they may complicate the nephropexy procedure. A quick conclusion that nephropexy is essential has a very great chance of being an error. Repeated ureteral dilatations, pelvic lavages, and general systemic studies are preferred as a complete cure may result.

With present outlines of investigation, percentages of occurrence mean nothing

as it is the individual case that counts. Actually few nephropexies should be done, but when indicated they are of great value.

Since so many questions are arising in industrial surgery, the study of the etiology of nephrotosis and renal torsion is essential. That renal trauma can occur from unbelievably small application of force is indicated by the following case:

J. M., age fifty-four, farmer, was standing on a wagon-bed nine days before admission to the hospital. He fell against the sideboard as the horses started. He was quite sore across the area struck, the left costo-vertebral angle, but was in and out of bed alternately. On the eighth day, burning on urination was followed by blood, then retention. Cystoscopy revealed a ruptured left kidney. Nephrectomy was done. The posterior surface of the kidney was macerated and blood filled the perirenal capsule.

Many unproven etiological factors have been suggested. A peri-renal fat loss, loose pendulent peri-renal fascia, long renal pedicle, inadequate hepato-, duodeno-, lienorenal ligaments, loss of sufficient intra-abdominal pressure, and a wider lower angle of renal fossa as in the female on the right side. The secondary effect of pregnancies superimposed upon the other factors, is recognized.

The treatment involves the reasonable trial of simple methods before resorting to surgery. For a large series of cases I must refer to reports of older urologists, among whom are Dr. Bransford Lewis of St. Louis, Missouri, and Dr. Frank Kidd of England. My series of cases is small as I wish to remain conservative in case selections.

In applying the fascia lata strips, the kidney is thoroughly exposed. Transverse incisions, one-half inch long, are made in the true capsule from the junction of the middle and upper thirds, at intervals of one inch apart along a vertical line passing beneath the lower pole of the kidney. Saline solution, subcapsular wheels facilitate this procedure. Fascia lata strips, one-fourth inch wide, obtained in the usual manner, are threaded on a Bodkin needle which has a round, ball point. The fascia lata strip is then placed underneath the

true capsule, a transverse fascia lata strip is used to encircle the kidney at the junction of the middle and upper third. A second fascia lata strip encircles the kidney at the junction of middle and lower third. The fascia covering the upper pole is split and rolled forward, forming a collar over the upper fascia lata strip (a technique described by Dr. Kidd of London). The application of the fascia lata strip then resembles the basket form application similar to that described and reported by Dr. Lowsley of New York. The end of the fascia lata strip is then drawn over the twelfth rib and tied beyond the fascia in the upper part of the curved, kidney incision.

I wish to present four representative cases:

CASE NUMBER ONE

Mrs. E. R. F., white female, age twenty-seven, was admitted to St. Anthony's Hospital, August 26, 1935, with a history of difficult urination, of very severe type, following the birth of her third child, now thirteen months old. This symptom had been associated with pain which began in the lower right quadrant of the abdomen, radiating backward to the costo-vertebral angle of the right side, and associated with pain in the right hip joint, along the inner side of the right thigh.

Cystoscopy revealed very marked ptosis of the right kidney, kidney function of both sides good. On September 12th, a fascia lata strip was sutured, underneath, to the right kidney capsule and the kidney swung into its normal position.

The patient was allowed to remain on the right side for one week, and flat on the back for two weeks following that. A small drainage tube was inserted for forty-eight hours. Two weeks following her operation the patient stated that she was free from pain in the hip joint.

On March 30, 1936, uretero-pyelograms, by retrograde method, showed the upper pole of the kidney extending above the twelfth rib. A very interesting thing noticed in connection with this case was that the kidney was found two and a half inches below its normal position, radiated anteriorly, and was very blue in color. It was lifted up for the suturing and became pink in color before the wound was closed.

I am convinced that pedicle torsion is very important, if not the most important, feature in altered kidney position.

CASE NUMBER TWO

Mrs. O. M., white female, age twenty-three, was admitted to the hospital, April 20, 1935. She began to have pain in the right costo-vertebral angle, radiating to the right thigh, twelve months prior to admission. She had an associated frequency and burning urination. Two months after the onset of the pain she developed a generalized swelling of the feet and ankles. About six months later she was cystoscoped, and that gave her a great deal of relief. All pain was relieved on lying down.

Uretero-pyelograms showed a ptosis of the right kidney. A fascia lata strip was placed under the right kidney and a nephropexy completed on April 23, 1935.

On March 28, 1936, one year later, cystourethrograms showed the kidney in its normal position, the urine clear in color, showing only occasional pus cell and one plus albumen. The urine findings, before nephropexy, were many pus cells and many motile bacilli, four plus albumen. The effort in this case was to improve kidney drainage and relieve the patient, observing whether the kidney position improvement had a favorable influence on the albuminuria. Analyses since her operation have shown occasionally no albumen and occasionally one plus. She has gained thirty pounds in weight and has been doing her own house work. She was not permitted to do any work the first six months after her operative procedure.

A letter from her during the sixth month following the operation contained a strong request that she be permitted to do her own work, as she felt perfectly well.

CASE NUMBER THREE

Mr. J. H., white male, age twenty-six, bilateral renal ptosis, was operated by Dr. Wallace and myself in 1930, at the University Hospital. He had had severe renoureteral colic at intervals, which required heavy doses of morphine. These attacks had been followed by temperature of 104 to 105, and chills. For six months prior to his operation the chills and fever, and attacks of colic were controlled by ureteral dilatation, carried out at intervals of three

to four weeks. A nephropexy, using chromic catgut, triangular sutures, through capsule flaps, was done on the left side. This was the side which was giving the most pain at that time. The patient was to return for operation on the right side.

He did not have any more colics or urinary distress until the last year. He has had two small attacks for which he did not seek medical relief. He came under my observation March 26, 1936, at which time he had required, during the evening, one and one-fourth grains of morphine, without relief.

On admission to St. Anthony's Hospital, and after conference with the attending physician an ampoule of spasmalgin was administered. This gave relief after ten or fifteen minutes. Intravenous pyelograms showed the left kidney in good position and he had had no pain on the left side, the pain being confined to the right side, in which the ptosis still existed. He will arrange soon for a nephropexy of the right kidney. Over a period of five years this patient has received a great deal of relief from his first nephropexy and it is unfortunate that a bilateral nephropexy was not done at that time.

CASE NUMBER FOUR

Miss O. H., white female, age thirty-one, with severe right reno-ureteral colic

which radiated to the right leg, that had been present for three years. A right nephroptosis was found. This patient was operated November 5, 1930, by Dr. Wallace and myself. Number three chromic catgut sutures were placed in capsule flaps, triangular, from anterior and posterior and carried out above the twelfth rib, posteriorly.

This patient was checked six months later and the kidney was still in its proper position. She returned to her work and has referred another patient through her brother, in the past year, who said that she was in excellent health. Unfortunately, I had no opportunity to secure follow-up pyelograms in her case.

CONCLUSION

This subject has been approached for the purpose of showing that, in properly selected cases, we are able to render a great service by replacing ptosed kidneys and kidneys with twisted pedicles.

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Precancerous Lesions of the Skin*

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Every physician is called upon from time to time for an opinion as to the relation of some chronic skin disorder and cancer and it behooves him to be able to give a reasonably accurate prognosis. The research work in cancer has been progressing with mighty strides during the past few years and much has been added to our knowledge of cancer. However, we must continue to recognize the fact that

chronic irritation, especially of some pre-existing skin disorder, is a primary factor in the causation of cancer. Proper advice or treatment of a skin lesion may save serious complications at a later date.

It is improper to term a lesion as being precancerous but it is used because it is a convenient term and intimates that under certain conditions certain lesions may become cancerous. Lesions of this type have been a subject for discussion for many years. Eller and Anderson (*Journal*

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American Medical Association, February 8, 1930) have summarized the subject and list more than twenty skin diseases which may be forerunners of cancer. They list the following conditions:

1. Syphilis.
2. Leukoplakia.
3. Radiodermatitis.
4. Moles (also malignant lentigo melanotic whitlow).
5. Senile keratoses.
6. Kraurosis vulvae.
7. Occupational keratodermas (tar, pitch, arsenic dust, oil, heat).
8. Lupus vulgaris and tuberculosis cutis.
9. Arsenical keratoses.
10. Sebaceous cyst.
11. Lupus erythematosus.
12. Chronic ulcers (varicose ulcers, pellagrous ulcers, fistulas).
13. Paget's disease of the nipple.
14. Cicatrices.
15. Cutaneous horns.
16. Bowen's disease.
17. Extramammary Paget's disease.
18. Papilloma of the tongue.
19. Xeroderma pigmentosum.
20. Blastomycosis.
21. Inflammatory dermatoses (psoriasis, lichen planus, eczema).

Only a few of these are of great importance because of their incidence.

Chronic ulcerations of all kinds and especially syphilitic are prone to degenerate into malignancy. This is particularly true in the case of gumma of the tongue and chronic ulcerations in the buccal cavity. It is well therefore to continue to suspect malignancy in many of these lesions even though the serology is positive. Frequently a malignant lesion in the mouth is aggravated by anti-leucic therapy.

Leukoplakia must always be considered as a premalignant lesion. The cause of this condition is not known in all cases though frequently is due to irritation from tobacco or other chemicals. Many cases of persistent leukoplakia have positive Wassermanns but they do not improve under treatment. Thorough cleanliness, absti-

nence from tobacco, hot, cold or irritating foods is important though in some cases which have developed to the point of considerable thickening of the diseased tissue, destruction of the lesion is indicated. The high frequency spark can be very satisfactorily used in this condition.

Radiodermatitis is occasionally the site of malignant change, the lesion practically always being of the squamous cell variety. Surgery or destruction by means of the high frequency spark is usually the best method of treatment.

The relation of moles to cancer is widely discussed by both laity and the profession. Considerable confusion exists in regards the subject for several reasons: (1) There are many varieties of moles. (2) Many are not moles at all but are fibromata. Moles are definitely premalignant lesions though because of their incidence the probability of cancer developing from a single mole is very small. There are number of important considerations regarding moles. For instance, the color and type of pigment may be the deciding factor as to the steps to be taken in treatment. If a mole is black, blue-black or slate colored it should be considered as a melanoma and should be handled with care. It is occasionally better to leave a lesion of this kind entirely alone unless there is some signs of degeneration such as increase in size, peculiar sensations in the lesion, or frequent irritation. Wide elliptical excision by means of surgical diathermy is the best method of treatment of these dangerous moles. If it is on a fleshy area the wound may be sutured, though if it is on a bony area it is well to allow the lesion to granulate. There is practically no danger in the removal of a non-pigmented or even a slightly brownish colored mole if it is destroyed by means of the fulguration needle. It is simply a question of thorough destruction and any mole that is subject to chronic irritation should be so treated.

Keratoses are probably the most common forerunners of skin cancer. There are two types, the senile and seborrheic, but no distinction need be made for practical purposes. They are caused by sunlight chiefly and occur among those who have fair tender skins and who are exposed to sunshine and wind a great deal. Hazen be-

lieves that nearly five per cent of senile keratoses ultimately lead to cancer. The extent and depth determine the type of treatment most suited for it. In the acute inflammatory type x-ray or radium is usually the best method of treatment. The high frequency spark is better, however, for small circumscribed lesions. Frequently there is some question as to whether a keratosis has already undergone malignant change so it is better to err on the safe side and treat the lesion as if it were an epithelioma.

A sebaceous cyst may be a forerunner of cancer but the incidence is relatively small. Cysts that have been operated unsuccessfully and remain inflamed for a long time are more liable to become cancerous.

Any chronic dry eczema of the nipple must be investigated thoroughly as it may be Paget's disease which is a superficial

eczematoid cancer of the nipple and rapidly fatal unless checked.

Scar tissue involving large areas occasionally develop into cancer. This type is usually of the squamous cell variety and very malignant.

Papillomata of the tongue should receive special attention as they are prone to become malignant. Thorough destruction by cautery or surgical diathermy is indicated.

A number of skin conditions known to be forerunners of cancer are listed and a few of the most important ones are discussed with special reference to treatment. The more important ones are syphilis, leukoplakia, keratoses, sebaceous cyst, Paget's disease, scar tissue, and papilloma of the tongue. With closer attention to these conditions in their early stages the incidences in skin cancer can be materially reduced.

Mastoiditis in Mal-Nourished Infants*

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In this paper I am discussing mastoiditis in the mal-nourished, below par type of infant and not the acute type following an upper respiratory infection complicated by acute mastoiditis. The picture, not so common in private practice, occurs mostly in clinical work. I have been impressed, for some time, with the condition as found in the wards of the Crippled Children's Hospital. Most of these cases are admitted to the hospital for the treatment of a sub-acute or chronic diarrhea primarily. Usually there is a history of poor feeding associated with poor hygiene and home conditions. Many of the cases give no history of symptoms pointing to involvement of the middle ear or mastoid. Even in older infants, that should be able to complain of pain, nothing is said of earache. So often the symptoms are entirely silent. The con-

dition is discovered or suspected as a result of a careful check up of that area. An interesting fact in these cases, is that so often there is a flare up of the diarrhea and temperature which cannot be explained. This is a signal that probably something has been overlooked. Especially is this true when there is an extension of the mastoid process.

It appears that frequently we are dealing with a group of symptoms due to several related pathological processes and not separate entities. Sometimes it is difficult to say just which is primary in the picture. In some cases it is quite definite that the mastoid pathology is secondary to an intestinal infection and occurs later.

Lirdler¹ states that the appearance of symptoms of general sepsis is of first importance in the diagnosis of otogenous sepsis. Special local symptoms in the ear and

*Read before the Section on Obstetrics and Pediatrics, Annual Meeting, Oklahoma State Medical Association, Enid, April 7, 1936.

its surrounding area need not be present, it is even the rule that primarily no striking signs may be found.

Brokman² concludes that there is a probable close relationship among diseases which were formerly thought to be separate clinical pictures. The main symptoms are otitis media, diarrhea, edema and disturbances in the elasticity of the skin, and disturbances of the central nervous system. Pathologic, anatomic, bacteriologic serologic investigations have confirmed on the whole this clinically unified point of view. Thereby a series of diseases which were heretofore stamped otogenous sepsis, atypical alimentary intoxication or atypical dysentery become a clinical unit.

The two following cases, briefly summarized, are from the hospital records:

E. F. L., female, age ten months. Entered hospital November 19. C. C.: Undernourished, persistent diarrhea. The diarrhea had been present for six weeks. Thirty stools a day which were liquid and green. Weight went from sixteen pounds to nine pounds.

Past history: At four and one-half months of age baby had a severe attack of whooping cough complicated by otitis media. There had been a definite exposure to tuberculosis.

Physical: Only positive findings are given here. Child was poorly nourished and very dehydrated. Skin loose and wrinkled. Musculature soft and flabby. Ears—Right drum red and bulging, although there were no symptoms indicating this condition. Chest—Rachitic. Abdomen—Slightly distended, spleen not palpable, liver extending one cm. below right costal margin.

Diagnosis: Anhydremia, Otitis Media, Rickets, Constitutional inferiority.

Temperature 100 to 102; respiration 30; pulse 90.

Blood—Hgb 80 per cent; R. B. C. 3,890,000; W. B. C. 6,400; Polys. 50 per cent; S. L. 50 per cent.

Urine—Many W. B. C. with clumps.

November 29:

W. B. C. 15,100 with 48 per cent polys. Widal negative, Wassermann negative,

tuberculin reaction negative. Stools eight to ten daily.

Ear consultation report: "Both ears seem to have free drainage. It is possible that opening the mastoids would be beneficial."

The mastoids were opened at our request. It was done under local anesthesia. Both mastoids were full of pus and the mucosa edematous. There was no post-operative shock.

November 30:

Temperature 99. There was considerable drainage from the mastoids. Patient much quieter. She continued to improve and the diarrhea was less marked. Several blood transfusions were given from time to time to hasten recovery.

December 29:

Right mastoid healed. There was a small amount of drainage from the left. General condition improved.

December 31:

Patient discharged. Parents were instructed to report to home physician for further observation.

The recovery in this case was more rapid than many. It illustrates the beneficial effects of mastoid drainage in this type of infection.

CASE NUMBER TWO

L. W., male, age fourteen months. Entered hospital October 22, 1934.

C. C.: Persistent diarrhea, loss of weight.

The diarrhea had persisted for two months with six to eight stools a day. There was a general loss of weight.

Past history: Very poor diet, mostly oatmeal.

Physical: Only positive findings are given here. Poorly nourished and dehydrated. Skin in folds. Pale. Ears—Both drums red and inflamed. Nose—No discharge. No tenderness over mastoid. Chest—Negative. Abdomen—Poor muscular tone; some generalized tenderness over abdomen; spleen not palpable; liver three to four cm. below costal margin.

Diagnosis: Infectious diarrhea, marasmus, otitis media.

Temperature 101; pulse 140; respiration 30.

Blood: Hgb. 75 per cent; R. B. C. 4-100,000; W. B. C. 30.00 with 52 per cent polys. 48 per cent S. L. Widal negative.

Urine: Albumen one plus; 250 cells with clumps, hyaline and granular casts.

Both drums were opened and a small amount of bloody drainage was noted. This was repeated on the twenty-sixth and pus drained from the left. The fever continued, patient was quite irritable and the diarrhea persisted.

X-ray of mastoids: "Fluid throughout right mastoid. Unable to demonstrate definite breaking down of the cell walls."

Ear consultation: "Bulging of posterior drum margin and canal roof on each side. Advise bilateral mastoid antrotomies."

October 27, 1934: The mastoids were opened under local anesthesia. The mucosa was thickened. There was pus and some moderate bone softening in each side but more marked on the right. There was no post-operative shock. The next day the patient seemed slightly improved. Took food and was a little brighter.

Several blood transfusions were given from time to time. General condition slowly improved until November 3 when patient developed broncho-pneumonia and died November 7, 1934. Until the pneumonia developed patient was slowly improving.

Marriott³ says: "In mal-nourished infants with hemolytic streptococcic infections or with mastoid infections with organisms of the intestinal group, marked general symptoms of diarrhea, vomiting and anhydremia may be present despite the fact that local evidences of infection in the mastoid are but slight. The local evidence in some instances amounts to no more than a swelling of the posterior superior wall and adjacent drum membrane. There may be no tenderness, redness or swelling over the mastoid region. Roentgenograms may reveal a clouding of the mastoid region and even the whole mastoid process but inasmuch as there is so much individual variation in normal infants . . . roentgenograms should be interpreted only in comparison with the opposite side and if this also is involved, it

may be impossible to reach a conclusion as to the significance of the pictures." In some cases the mastoid involvement may not be suspected during life and is found at post-mortem examination.

TREATMENT

It is sometimes difficult to convince the otologist that there is a mastoid infection and to get him to carry out the rather simple surgical procedure indicated. The operation is done under local anesthesia and consists of an antrotomy. Extensive cleaning out of the mastoid should be avoided as these patients are in poor general condition and are poor risks for extensive surgical work. If the simple antrotomy is done it takes very little time and there is little if any post-operative shock. As the general condition of the patient is very important, usually several blood transfusions are needed.

Recovery, if it takes place, is not as a rule rapid in these cases and may be a matter of weeks. Very often there are many ups and downs. Every infant with this condition should be given the benefit of the doubt and operated. There is very little chance of recovery if the mastoid is not drained.

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Induced Hypercalcemia: Its Possible Therapeutic Relation to Thrombocytopenic Purpura

Harry Lowenburg, Sr. and Theodore M. Ginsburg, Philadelphia (Journal A. M. A., May 23, 1936), observed a second case of acute hypercalcemia produced by intentional overdosage with parathyroid extract in a boy with thrombocytopenic purpura. Toxic symptoms occurring in man are similar to those reported by many workers as occurring in animals with experimental hypercalcemia. The earliest symptom is vomiting. This is shortly followed by weakness, apathy and lethargy. Both patients, once hypercalcemia was established, presented definite objective changes in the blood (bleeding time, clotting time, clot retraction, platelet count) as well as clinical cure. The treatment of thrombocytopenic purpura by the induction of artificial hypercalcemia by the use of large doses of parathyroid extract is at least worthy of trial. Calcium gluconate was used to protect the bones from the withdrawal of calcium from them into the blood. As compared with other forms of treatment, one would seem to have nothing to lose. On the assumption that the apparent cures were obtained as the result of the treatment administered, no explanation is apparent to account for the results.

Pulmonary Complications Which Frequently Follow Abdominal Surgery*

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Since the establishment of surgical procedure, as a method of combating disease, the primary concern of the surgeon has been to reduce both his morbidity and mortality rate. This of course, as we all know, received its first great vehicle following the work of Louis Pasteur, which marked a basis for our modern antiseptic technique. It is of interest to note the story of the first abdominal operation in which the wound healed by first intention, as related in autobiographies of Doctor Franklin H. Martin. This first case in which the wound healed by first intention in the city of Chicago, received a great deal of attention by the doctors in the city of Chicago. This effort to reduce morbidity and mortality has continued. The present day surgeon is as much concerned with the reduction of both these factors to a fraction of a per cent as the surgeon in the past was concerned in reducing them in round figures.

In a recent article which has occurred in the literature, Dr. Dannreuther of New York reported a thousand cases of pelvic surgery which is the second series of a thousand cases he has recorded. The first series was reported in 1930 in which he states that his morbidity rate was 7.9 per cent and that his mortality was 1.9 per cent. The recent series reported in the May issue of the *Journal of Surgery, Gynecology and Obstetrics* shows a morbidity of 5.3 per cent which was a reduction of 2.6 per cent over his past series and a mortality of 0.8 of one per cent, which is less than half of his past mortality report. It is also interesting to note in his report the methods by which this reduction in morbidity and mortality was accomplished. We may say without any doubt whatsoever that these accomplishments were made possible by a thorough

and detailed study of the factors concerned in producing these complications.

It has been known for a great many years that there are certain pulmonary complications which occur more frequently following abdominal surgery than other types of surgery. In order that we might lay a foundation for this discussion, let us first briefly review the mechanics of respiration. We know the total quantity of air which leaves the lungs when a maximum inspiration is followed by a maximum expiration is spoken of as the vital capacity. We further know that at the end of this maximum expiration there is still some air present in the lungs occupying the so-called dead spaces, this air is spoken of as the residual air. The sum of these two, that is, the vital and the residual air, constitute the total pulmonary capacity. We are also familiar with the fact that during quiet and easy breathing a certain amount of air is breathed in and out of the lungs. This air is spoken of as tidal air.

The two most frequent complications which follow abdominal surgery are: First, pulmonary thrombosis and embolism; second, either massive or local collapse of the lung tissue which is often followed by an inflammatory condition. Certainly there is nothing more humiliating to the surgeon than to perform a simple abdominal operation on a patient who is in excellent general physical condition and to have it followed by a major catastrophe such as we have mentioned. To sit idly by and say that these things are unavoidable is questionable, because a thorough survey of the current literature will prove that these complications can be materially reduced if the proper precautions are resorted to.

One of the most interesting pieces of work that has been reported along this line is by Dr. D. H. Patey. He and his asso-

*Read before a meeting of the Kay County Medical Society, Tonkawa, May 21, 1936.

ciates were aware of the facts as mentioned above. He states that they were also aware of the fact that patients that had had a recent abdominal operation complained of pain particularly at the end of inspiration and expiration. The reason for this is probably due to a passive stretching of the wound on inspiration and a contraction of the abdominal muscles on expiration. As a consequence the patient will breath very shallow and the pulmonary expansion will be markedly reduced.. In order that they might ascertain proof of this theory they tested the vital capacity of patients, both before and after abdominal operations and they found without exception that all patients with abdominal incisions had marked reduction in the vital capacity. These tests were made by the use of a Douglas bag. By this series of experiments they proved that the chest expansion was lessened. They were also of the opinion that the diaphragmatic excursion was decreased. In order to test this theory they took x-ray pictures of the chest showing the position of the diaphragm both following a maximum inspiration and a maximum expiration. These pictures were repeated two days after the same patients had been operated on with an abdominal incision. The technique was identical and the same apparatus was used. They found a very marked decrease in the diaphragmatic excursion. As a control they checked the same mechanical movements on patients who had been operated on for other conditions than abdominal operations. In order to get a fair comparison they used four cases in which a radical breast operation had been done and they found that the diaphragmatic excursion had not been decreased.

Doctors Holman and Mathes have given evidence in a recent report to show that central bronchial obstruction plays a very important part in atelectasis and that the patient through fear of pain is unwilling to contract the traumatized abdominal muscles and therefore, through a forced expiration to dislodge this accumulated mucus. The patient was kept in a position in which he was unable to dislodge this accumulated mucus because of excessive doses of hypnotics.

Another factor which is probably of importance more particularly in the compli-

cations followed by thrombosis in the pulmonary vessels, is the variation of intra-abdominal pressure. We know that when the pressure in the thorax is increased that the pressure in the abdominal cavity is decreased. Also that when the intrathoratic pressure is lowered the intra-abdominal pressure is increased. This undoubtedly plays a major part in the return flow of the blood from the inferior vena-cava to the heart; consequently, when a patient who has had abdominal surgery and breathes very lightly due to a desire to keep himself free from pain or who breathes very lightly due to the fact that he is under the influence of opium, the exchange of pressures between the thorax and the abdomen is decreased and the pressure more even. As a consequence, the blood flow from the inferior vena-cava to the veins of the heart is markedly decreased. We are all aware that a decrease in the pressure flow of blood through these large vessels is a material factor in the producing of a thrombus.

After having received these theoretic considerations, many of which have been substantiated by clinical researches, we must determine their value. In order that we might know what there is to be done about it and in order that these frequent pulmonary complications might be lessened, I believe without any question that the practice of giving large doses of morphine to patients pre-operatively is not a good one. The reason is that the morphine decreases the respiratory mechanism both as to frequency and intensity and the patient will not make nearly so great an effort to rid the bronchial passages of mucus plugs. The administration of atropine is probably even more deleterious because it is a factor in increasing the secretory activity of the bronchial glands and probably stimulates them to a greater production of mucus.

We use in our clinic a routine administration of carbon dioxide gas toward the end of anesthesia. By this method the patient is made to breathe very deeply and we feel that it produces a pulmonary inflation in those areas of the lung tissues which have collapsed. Other points which are probably of vital importance are the posture of the patient on the operating table, the maintenance of one position

after operation and the compression of parts of the thorax by lying on the side or resting on a sand bag. We feel that if these precautions are resorted to that many of these pulmonary complications which occur after abdominal surgery may be eliminated.

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Paraldehyde in Obstetrical Analgesia*

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The relief of pain during labor has been attempted by the use of various methods and each has its objections. The ideal drug is one that will not diminish the uterine contractions and will produce satisfactory analgesia and amnesia without danger to the mother or child. Paraldehyde, given rectally, on account of its wide range of safety, has been found to meet these requirements in most cases in the production of basal anaesthesia in obstetrics.

Paraldehyde, apolymer of ethylaldehyde, is a powerful hypnotic and narcotic. It does not depress the heart but tends to strengthen it. There is no effect on the respiratory tract, nervous system, or muscles. It acts quickly and has no unpleasant after effects. Large doses can be given with safety. The objectionable taste and odor are of no importance when given rectally. The excretion of paraldehyde is by the lungs and kidneys without effect upon these organs. It can be used in the toxemias of pregnancy without ill effect.

Paraldehyde used alone in labor will not produce satisfactory analgesia or amnesia even in large doses, but acts only as a basal anaesthetic and other additional drugs must be used to obtain satisfactory results. The most commonly used drugs are the barbiturates, such as nembutal and sodium amytal, morphine, pantopon and scopolamin. The most satisfactory has been found to be nembutal. Benzyl alcohol 1.5 cc. is added to the injection as it has been found

that it relaxes the cervix and shortens the first stage.

A combination of the Rosenfield-Davidoff and the Kane-Roth technique has been found to be the most satisfactory method in obtaining analgesia and amnesia. As soon as labor is established, as characterized by the onset of regular uterine contractions regardless of the condition of the cervix, or the station of the head, the paraldehyde is given. Routine obstetrical preparation is done. The rectum is completely cleaned with enema until the solution returns clear. This is very important as fecal matter remaining will prevent absorption of the drug, incomplete analgesia, and consequent restlessness. Nembutal grains six is given by mouth. Twenty minutes later paraldehyde drams six containing 1.5 cc. benzyl alcohol in one ounce of olive oil is given *per rectum* through an 18F rectal catheter by means of a glass Asepto syringe. Care must be taken that the catheter is not kinked and that it is inserted at least half its length and the end extends above the presenting part in the pelvis. If this is not done the drug will be expelled with the first few pains. The catheter is emptied by the injection of air after the solution is injected in the rectum. Pressure is made on the perineum for at least fifteen minutes after injection to prevent expulsion of the solution.

In a few minutes the patient falls asleep and the odor of paraldehyde is perceptible on the breath. The patient sleeps quietly between the pains and with the contrac-

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tions she usually moves about and turns from side to side and may groan, but after the pain she again sleeps soundly and often snores.

Labor is usually less active during the first hour after the administration of the drug and it may be cut down as much as fifty per cent, but then it begins to pick up and becomes more active.

The duration of the analgesia and amnesia depends upon the individual susceptibility to the drug with the average duration from three to twelve hours.

When the patient begins to get restless and to groan and to be in evident pain regardless of the time since the first dose, nembutal grains three is given by mouth. If the patient is unable to retain the capsule it may be given rectally in solution in saline or additional paraldehyde. If the restlessness persists after thirty minutes paraldehyde drams four is given rectally as in the original injection. Very rarely is more than two doses needed, but if necessary it can be given with safety.

Labor progresses very satisfactorily. Rectal examinations should not be done too soon after the injections until the drug has been absorbed. Soon the head will be seen to be crowned on the perineum and the patient is taken to the delivery room and with a small amount of supplemental anaesthesia such as ether, nitrous oxide, or ethylene, the delivery may be concluded. Outlet forceps, episiotomy, or other operative procedures may be done with a minimum of anaesthesia.

The third stage is not affected as the placenta is usually delivered easily without postpartum hemorrhage or additional loss of blood.

After the patient returns to bed she usually sleeps for six to eight hours and awakens without any after effects and with complete amnesia from the first rectal injection.

The success of the paraldehyde method depends upon the correct administration as to the dosage which must be adequate, and the technique of the rectal instillation. The dose must be repeated often enough to insure complete analgesia and amnesia.

The length of labor is also an important factor in this method. In the case of short

labor lasting only one or two hours usually found in multipara the method is of little value, but in the cases of long slow labor in primipara or posterior presentations the method is almost ideal.

The advantages of the paraldehyde-nembutal method of analgesia and amnesia are:

1. Satisfactory analgesia and amnesia in most cases.
2. No ill effects upon the mother or child.
3. Rapid action. Sleep within three to five minutes.
4. Large doses of paraldehyde tolerated.
5. No cardiac or respiratory depression.
6. Less psychic shock to mother from pain.
7. Less asphyxia of the new born.
8. Simplicity in administration.
9. Slight decrease in uterine contractions.

The disadvantages of this method are:

1. Restlessness may be present in some cases to a marked degree.
2. Instrumentation more often needed.
3. Objectionable taste and odor of drug.
4. Little value in short labor.
5. Moderate temporary decrease in uterine contractions.
6. Closer nursing care and observation.

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Injection Treatment of Reducible Hernia

In the injection treatment of hernia W. M. McMillan, Chicago, and D. R. Cunningham, Evanston, Ill. (*Journal A. M. A.*, May 23, 1936), used from one to three cc. of a solution containing 0.5 gm. of tannic acid, three cc. of benzyl alcohol 0.5 gm. of thymol and 100 cc. of grain alcohol, or from four to eight minims (0.25 to 0.5 cc.) of a solution which contained 15 cc. of phenol, 7.5 cc. of alcohol and 7.5 cc. of tincture of thuja. Selection of the cases excluded hernias associated with undescended testicle, sliding and irreducible hernias. No attempt was made to treat patients suffering from the following

conditions involving the general health: marked obesity, hemophilia, syphilis, neurosis, toxic goiter; patients suffering from chronic severe coughs, and obviously all cases requiring surgery for the associated conditions, such as abdominal tumors, enlarged prostate, large varicocele or hydrocele. It was also a rule that no patient was treated who was previously not relieved of all symptoms by wearing a truss. The injection was carried out in the following manner: The patient was placed in the supine position, and after careful examination to make certain that the hernia was reduced, the solution was injected slowly and firm pressure was exerted thereafter for a few minutes. The syringe must be aspirated before the injection is made to make sure that one is not in a blood vessel. In the inguinal type of hernia all injections were made along the entire course of the canal regardless of the type of hernia, because in some cases when an apparently direct inguinal hernia was treated and the external ring was completely closed subsequent weakness developed about the internal ring and vice versa, so the area through which the hernia protruded was treated first and the remainder of the canal subsequently. In the case of direct inguinal hernia the solution was deposited also within Hesselbach's triangle and along the conjoined tendon. In this case the solution was introduced mesial and posterior to the cord. In the case of femoral hernia, the point of the needle is placed in the femoral canal mesial to the surgeon's finger, which is previously placed therein. In incisional and umbilical hernia, care should be used to deposit the solution directly into the fascia with the hernia well reduced to prevent any injury to a viscus. The average number of injections required were from eight to twelve, which were given once or twice a week, depending on the reaction. It was the authors' custom not to remove the truss at night until the whole area seemed firmly closed, and the patient was not allowed to remove the truss permanently until the entire area through which the hernia had presented itself was firm and no impulse could be elicited when the patient coughed in an erect standing position. All patients were advised to return for a check up three times yearly, to avoid constipation, and to replace the truss if suffering from any unusual or prolonged coughing spells. A summary of their study shows that of the 350 cases that they examined, 308 were found suitable for treatment, of which 170 patients are now under active treatment and 138 have been discharged as completely cured. The remaining forty-two patients failed to cooperate. The recurrent rate in all types of hernia treated has, to date, been eight per cent. When recurrences did occur the hernia was invariably much smaller than the original one. It does not seem to the authors, in the light of their experience and results, that the hazards of injection treatment are greater than those from other forms of treatment. The recurrences following this treatment seem to be considerably less than after surgery.

Reversible Cardiac Enlargement

John E. Walker, Columbus, Ga. (Journal A. M. A. May 23, 1936), asserts that there are three distinct conditions causing cardiac enlargement in which the heart returns to normal size after specific therapy. These conditions are arteriovenous aneurysm, beriberi and myxedema. It is of course doubtful whether these instances of cardiac enlargement have any bearing on the larger problem of cardiac involvement in hypertension. However, Christian found that only about two thirds of the cases of nonvalvular cardiac enlargement of middle age are related to present or past hypertension,

and he states that there are many "unanswerable riddles" in discussing the relation of hypertension to cardiac enlargement. From this it may be inferred that cardiac enlargement in hypertension is not necessarily the benign compensatory process resulting from purely mechanical causes, as generally considered. Riesman and Davidson are strongly of the opinion that there is a nutritional factor in cardiac patients who have repeated attacks of decompensation. The metabolic origin of another cardiac disease, namely, coronary sclerosis, is a seriously considered hypothesis. Possibly along similar lines of investigation the future may demonstrate that the present conception of cardiac enlargement in hypertension as arising purely from mechanical factors is too naive. Roentgenograms depicting the striking return to normal size of enlarged hearts in arteriovenous aneurysm, beriberi and myxedema are given. These show that an enlarged heart is not always a permanent irreversible condition. The three diseases are readily amenable to specific treatment and they must be considered either as primary or as contributing factors in the differential diagnosis of all enlarged hearts.

Zinc Ionization in Nasal Allergy

L. B. Bernheimer, Chicago (Journal A. M. A., June 6, 1936), treated twenty-five persons suffering with nonseasonal allergic rhinitis with zinc ionization. All gave typical allergic histories, having had trouble for from one month to seven years. Ionization had no effect on the clinical course of the disease in twenty of the patients. Five were free from symptoms for from five to eleven months. The nasal mucous membrane of these five patients became pink and otherwise normal to macroscopic examination. These periods of remission are much longer than the usual periods of spontaneous remission observed frequently in the course of untreated hyperesthetic rhinitis with proved non-seasonable nasal allergy. The records of twenty patients treated with trichloroacetic acid or phenol are given. The escharotics were applied to the anterior tips of both middle turbinates, the medial and anterior lateral surfaces of both inferior turbinates and both sides of the anterior septal wall. Of ten patients treated with phenol, four had periods of remission prolonged for from five to nineteen months. Of the ten treated with trichloroacetic acid three had periods of remission which lasted for from four months to two and one-half years. The usual clinical course of hay fever of ten individuals was in no way altered by ionization. Two patients suffering from hyperesthetic rhinitis developed anosmia. Both of these patients had a normal sense of smell before ionization but lost the ability to detect unpleasant, pungent or mild pleasant odors within twenty-four hours after ionization. Both complained of associated taste disturbances. It should not be forgotten that many persons suffering from hyperesthetic rhinitis have disturbances of the sense of smell resulting from the disease process itself. The rhinologist, therefore, for his own protection, should test the patient's sense of smell before employing ionization, just as the ophthalmologist tests vision before removing a foreign body. One patient developed a unilateral headache referred from the eye on the affected side to the lower occipital region and down into the neck and shoulders. The pain was typical of the syndrome described by Sleuder. It persisted for three and one-half months with short periods of remission following application of cocaine to the sphenopalatine foramen. The patient refused to submit to alcohol injection. No complications have ever been noted from the use of escharotics.

THE JOURNAL

OF THE

Oklahoma State Medical Association

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DR. L. S. WILLOUR.....Editor-in-Chief
McAlester, Oklahoma

DR. T. H. McCARLEY.....Associate Editor
McAlester, Oklahoma

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The editorial department is not responsible for the opinions expressed in the original articles of contributors.

Reprints of original articles will be supplied at actual cost provided request for them is attached to manuscripts or made in sufficient time before publication.

Articles sent this Journal for publication and all those read at the annual meetings of the State Association are the sole property of this Journal. The Journal relies on each individual contributor's strict adherence to this well-known rule of medical journalism. In the event an article sent this Journal for publication is published before appearance in the Journal the manuscript will be returned to the writer.

Failure to receive The Journal should call for immediate notification of the Editor, McAlester Clinic, McAlester, Oklahoma.

Local news of possible interest to the medical profession, notes on removals, changes of addresses, births, deaths and weddings will be gratefully received.

Advertising of articles, drugs or compounds unapproved by the Council on Pharmacy of the A. M. A., will not be accepted.

Advertising rates will be supplied on application.

It is suggested that wherever possible members of the State Association should patronize our advertisers in preference to others as a matter of fair reciprocity.

Printed by News-Capital Company, McAlester

EDITORIAL

CONSIDER THE HUMAN ELEMENT

In an address delivered by Walter Lippmann before the New York Academy of Medicine, entitled "Government Philosophy in a Sick World" he called attention to the most obvious triumphs of modern man, those which are most easily appreciated, are his great buildings, his great ships, his great machines, his great tunnels, dams, canals. Mankind has been profoundly impressed with the contrast between the efficiency of these engineering works as compared with the inefficiency of statesmen, of financiers, and of business men.

The engineer, it seems, is able to achieve what he sets out to achieve. He can plan and he can carry out his plan. He knows

what he is doing and he does it. So the idea took hold that society might be run by engineers, might be deliberately constructed according to a plan and then operated as efficiently as a great machine. This vision, if you will remember, played an immense part in the early enthusiasm for Mr. Hoover. Around 1920 he was hailed by many as the ideal ruler because he was not a politician but an engineer, though today, such is the changeableness of men, he is criticized because he is not a politician.

The point I wish to make is that conception of government as a problem in engineering is a false and misleading conception, that the image of the engineer is not a true image of a statesman, and that society cannot be planned and engineered as if it were a building, a machine or a ship. The reason why the engineering image is a bad image in politics, is a bad working model for political thought, is a bad pattern to have in mind when dealing with political issues, is a very simple one. The engineer deals with inanimate materials. The statesman deals with the behavior of persons.

There are some who think that government should use all of its powers of coercion to make the social order correspond with their own ideal of the nobler and more satisfying social order. But this is as if a doctor dealt with a patient on the assumption that he must use drastic medicine if he finds that his patient is not as strong as Hercules, as beautiful as Apollo, and as wise as Zeus. He would be an absurd doctor. The sound physician, I take it, is not attempting to make a superman out of his patient. He takes measures to protect him against the invasion of hostile bodies. He cultivates habits which improve his resistance. He intervenes with medicines and surgery when he thinks he can assist the patient in recovering his own equilibrium. Always, if I understand the faith of the physician, he regards himself not as a creator, designer, and dictator of the nature of man, but as the servant and the ally of nature. There are times, to be sure, when his patient is prostrate and the doctor must be the master of his whole regime. But even in these times, the good doctor will be continually seeking for ways, not to make a new man

of his patient, but to encourage those recuperative powers which may at last enable the patient to walk again on his own feet.

There is a vast difference between those who, as engineers dealing with inanimate materials, can dictate to nature and those who, as physicians dealing with living organisms, must respect nature and assist her. My thesis is that statesmen had better think of themselves as physicians who assist society than as engineers who plan and fabricate it. They will understand these problems better if they realize that society has not been invented or constructed by any man or any set of men, but is in fact the result of the infinitely complex adaptations by innumerable persons through countless generations. Its destiny is beyond the power of the human mind to imagine it. Its reality is complex beyond the mind's power to grasp it. Its energies are beyond the power of any men to direct it. Society can be defended. Its adjustments can be facilitated. Its various purposes can be clarified, enlightened, and accommodated. Its aches and pains can in some measure be relieved. But society is not and never will be a machine that can be designed, can be assembled, can be operated by those who happen to sit in the seats of authority.

To know this, to realize the ultimate limitations of government, and to abide by them, is to have that necessary humility which, though for the moment it is at a discount in many parts of the globe, is nevertheless the beginning of wisdom. Without it men will use political power for ends that government cannot realize, and in the vanity of their delusions fall into all manner of cruelty, disorder, and waste. They will have forgotten to respect the nature of living things, and in their ambition to be as gods among men they will affront the living God. They will have learned that those who would be more than human end by being less than human.

CONGRATULATIONS

Dr. W. J. Jolly, Oklahoma City, was elected to Affiliate Fellowship of the American Medical Association at their recent meeting at Kansas City, in accordance with a resolution adopted at our Enid meeting in April, and we wish to congratulate Dr. Jolly upon this distinction.

Editorial Notes—Personal and General

DR. J. B. CARMICHAEL, Duncan, has been appointed to succeed the late Dr. D. Long as county health superintendent of Stephens County.

DR. MELVIN C. KIMBALL, formerly of Oklahoma City, announces the opening of his office in Webb City, where he will continue the practice of medicine.

ANNOUNCEMENT

Twelve persons have been selected by the Oklahoma Memorial Association for its annual Hall of Fame. One of these is Dr. LeRoy Long, Sr., former Dean of the University of Oklahoma School of Medicine. He will be among those honored guests at the annual statehood day dinner held by the Memorial association in Oklahoma City, November 16th.

REPORT OF DELEGATES American Medical Association

A full report of the activities of the House of Delegates in the recent meeting at Kansas City will appear in the Journal of the American Medical Association during the next few weeks. To those members of the State Association who are Fellows of the American Medical Association, this report will be of no interest, since all the Fellows receive the Journal and have access to a full report.

On March 1, the membership of the American Medical Association was 101,946. Of these, 62,997 were Fellows of the Scientific Assembly. On the same date, Oklahoma had 1,494 members, of whom 724 were Fellows. Thus it seems that less than one-half of our state (and county) members receive the Journal.

Your Delegates take this opportunity to point out to those members who do not receive the Journal the great improvements which have been made in the Journal in the last few years. Of particular interest to those not situated in close proximity to medical centers, or good libraries, is the department of "Queries and Minor Notes." Any Fellow may write to this department for information on any medical problem with which he is confronted. The answer will be prepared by an expert on the particular subject. If the question, and consequently the answer, is of general interest, it will be answered in the Journal. The name of the one who asks for the information will not be printed without his consent.

It is always interesting and sometimes amusing to read the questions and answers in these columns. Hereafter it will be noted that the answers are not necessarily the consensus of opinion of the whole profession, but the opinion of the specialist who makes the answer. This will be in keeping with a resolution introduced in the recent meeting.

There are other departments, all of general, or special interest, which altogether make the Journal the greatest publication of its kind in the whole world. Every doctor, certainly every member of the State Association, who takes pride in his profession and who wishes to keep informed on all matters, scientific, social, legal, or political, which apply to, or affect, medicine in any way, should subscribe for the Journal. With few exceptions subscription to the Journal will give a member of the State Asso-

ciation entree to Fellowship in the American Medical Association and his name, appearing in the Directory published by the Association, will be designated accordingly. Life insurance companies and others desiring to find out "who is who," make free use of the Directory.

While speaking of the Directory, mention must be made of the embarrassment arising from the publication of names of those doctors who have been convicted of felony and whose names continue on the roll of state associations as members. The greater number of these are violators of the Harrison Narcotic Drug Act. The Federal government expected that conviction under this act would serve to cause revocation of license by State Boards. Most State Boards have been authorized to do this, but surprisingly few are actually doing it.

Revocation of license would, of course, automatically cancel membership in the Association. As long as a person is licensed to practice medicine in any state he must be registered under the Harrison law. The inconsistency of the situation is readily seen. We may expect to note in future Directories that the names of those who stand convicted of felonies, will not appear in the Directory as Fellows of the Association.

The Judicial Council took a "red hot shot" at those who consult with the cults. For the benefit of those among us who think that regular medicine should assimilate some, or all, of the cults, we quote the following from the Council's report: "The Judicial Council is in receipt of much correspondence attempting to justify, if not to advocate, consultations between doctors of medicine and chiropractors, osteopaths, Christian scientists, and other cultists and irregular practitioners; also appearance before their societies, teaching in their schools, and their admittance to hospital practice on a parity with the medical profession. The universal argument for all the procedures mentioned, is based on the false premise 'to work them gradually into regular medicine.' One of our principles of ethics is as follows: 'The obligation assumed on entering the profession . . . demands that the physician use every honorable means to uphold the dignity and honor of his vocation, to exalt its standards and to extend its sphere of usefulness.' Such specious argument seems to the Council to lack substance and be unreal. It seems impossible that knowledge gained through years of scientific laboratory work and teaching, can be assimilated by those of less preliminary training, and use of scientific methods of investigation and practice, ever to fit them to enter a profession, the dignity and honor of which, the standards and sphere of which, we are obligated to uphold, exalt and extend for the service the profession can render humanity.

"We further are of the opinion that it is just as impractical to suggest that the small percentage of cult practitioners will, through close relationship with the membership of our profession, be raised to our professional standards, as it is to expect the few rot-speckled apples in the apple barrel to become whole because of the preponderance of the sound ones."

All in all, throughout the session, there was a prevailing feeling that the medical profession should clean its own house and wash its dirty linen and keep it clean and in order. High scholastic standards will not, of necessity, be in the future the chief pre-requisite for admission to high standard medical schools. Adaptability, moral and ethical standards of the individual will receive important rating.

Medical economics and socialized medicine had

continued consideration, though not so abundantly as at the meeting last year in Atlantic City. It was very evident that the Legislative Committee has a watchful eye on the Department of Public Health at Washington. This was strongly indicated in the report of the Chairman of the Committee. If press reports can be relied upon, there is a strong tendency developing in this Department to reach out beyond purely public health work into socialized medicine. We may rest assured that the proper officials of the Association will not sleep on the job until doubts and fears have been clarified.

The Bureau of Legal Medicine has made a study of the question "Compulsory Integration of the Medical Profession." Generally speaking, this means that every legally licensed doctor or practitioner of the healing art, would automatically become a member of a legalized association, created by legislative enactment. Some such law was adopted in the last Oklahoma legislature in respect to the dental profession. The legal profession is organized in this manner and the scheme is satisfactory with that profession. In a detailed analysis, the Bureau brings out facts which are overwhelmingly convincing that the plan would be most undesirable in medicine.

Birth control was again brought up by the report of Committee authorized at a previous session. It served to develop the fact that while there was an element in the House favorable to birth control, a large majority was not favorable to any action on the part of the Association. The question was compromised by referring it back for further study.

Cooperative medical and hospital service was brought up on the final day of the session of the House of Delegates by one of the Oklahoma Delegates (Rogers). Word was received that a movement was underway in a certain community in western Oklahoma whereby farmers and others would be loaned money by the Government with which to buy stock in a hospital, for which they would receive medical and hospital service from a privately controlled organization. Unanimous consent was obtained from the House to introduce a resolution protesting against such use of public money, and authorizing the Board of Trustees to carry such protest to the President and other officials, and to take such other steps as in their judgment is appropriate. The resolution was unanimously approved.

As in most other legislative bodies, important matters are not actually decided in debate or speeches in regular session. Conferences in private rooms, in hotel lobbies, and even on golf courses, are often very effective. The House is not in session in the afternoon of the first day. This affords a splendid period for visiting, getting acquainted, and developing good fellowship. A by-product of the activities of one of your Delegates in this manner (Cook) was his election as President of the American Medical Golf Association, which holds a tournament on the first day of the session each year. According to reports, another Oklahoman won low medal score. This is not to be "sneezed" at either.

A sadness pervaded the whole convention and particularly the sessions of the House of Delegates, because of the grave illness of our then President-Elect, Dr. Tate Mason, of Seattle. It was reported that his illness was such that he would most probably never be able physically to serve as President. By a strict interpretation of the Constitution and By-Laws, he would have to be present in order to be installed. In spite of this, the House overwhelmingly voted that he be installed in absentia, and this seems to have met with universal approval. Until Dr. Mason is able to serve, if at all, the Vice-President elected last year, Dr.

Charles Gordon Heyd of New York will perform the duties of the President. Dr. Heyd is professor of surgery in a New York school but his activities while President of the New York State Medical Society and the ability which he exhibited in obtaining legislation in behalf of the medical profession served to place him in the limelight as suitable to carry on the duties of President of the American Medical Association.

Dr. Olin West was unanimously re-elected Secretary-Manager, as was also VanEtten as Speaker of the House.

We had only three invitations for the 1937 meeting and of these, only Philadelphia and Atlantic City were recommended by the Board of Trustees as having suitable facilities to properly take care of the convention. Atlantic City was selected by the margin of one vote; namely, 70 to 69. We earnestly hope that Oklahoma will furnish a large delegation at Atlantic City in 1937.

Our Secretary-Editor, Dr. L. S. Willour, was a frequent visitor at the sessions of the House of Delegates. We were pleased to be able to assist him in obtaining the promise of Dr. Olin West, Secretary-Manager of the Association, to attend our next annual meeting at Tulsa. Dr. West has a charming, pleasing personality and his visit will, we are sure, result in much good to our State Association.

We feel that it is within the bounds of our duty to inform our membership of the zeal exhibited by our Secretary-Editor in his endeavor to secure more high grade advertising for the Journal of the State Association. This activity furnishes a ready explanation of the excellent financial report on the cost of the Journal, which was made at Enid recently. We feel sure that the members of the State Association appreciate what the Editor is doing for the Journal.

On request of the President of the Oklahoma City Clinical Society, we obtained the promise of Dr. Charles Gordon Heyd, newly elected Vice-President, to be the guest of the society at its conference in October. We feel sure that Dr. Heyd will ably fill the place of our afflicted President, Dr. Mason.

Respectfully submitted,

W. A. Cook,
McClain Rogers,
Horace Reed.

The Summer-Time Use of Mead's Oleum Percomorphum

During the hot weather, when fat tolerance is lowest, many physicians have found it a successful practice to transfer cod liver oil patients to Mead's Oleum Percomorphum.

Due to its negligible oil content and its small dosage, this product does not upset the digestion, so that even the most squeamish patient can "stomach" it without protest.

There are at least two facts that strongly indicate the reasonableness of the above suggestion: (1) In prematures, to whom cod liver oil cannot be given in sufficient dosage without serious digestive upset, Mead's Oleum Percomorphum is the anti-ricketic agent of choice. (2) In Florida, Arizona and New Mexico, where an unusually high percentage of sunshine prevails all seasons, Mead's Oleum Percomorphum continues increasingly in demand, as physicians realize that sunshine alone does not always prevent or cure rickets.

Mead Johnson & Company, Evansville, Indiana, invite you to send for samples of Mead's Oleum Percomorphum for clinical use during the summer months to replace cod liver oil.

OBITUARIES

DOCTOR GENERAL PINNELL

General Pinnell was born in the state of Arkansas on April 21, 1878, and died in a hospital in Tulsa, Oklahoma, on June 15, 1936, of cardiac failure. He leaves his wife, two sons, three sisters, and three brothers.

He graduated from the Memphis Medical College and Hospital, Memphis, Tennessee, with the degree of Doctor of Medicine in 1902, and practiced his profession in the state of New Mexico, and at Eric, Mangum, and Lawton, Oklahoma, coming to Miami in 1918 where he has practiced continuously in his specialty of eye, ear, nose and throat ever since.

He was a member of the Ottawa County Medical Society, the Oklahoma State Medical Association, and the American Medical Association. He was a member of the Miami Lodge No. 140, A. F. & A. M., Order of the Indian Consistory at McAlester, Oklahoma, and Akdar Shrine of Tulsa. He was also a member of the Lions Club and the Miami Chamber of Commerce.

Dr. Pinnell was one of the most beloved physicians in Miami, having his friends in all walks of life and loved most by those who knew him best. In his passing, the community has lost one of its guiding spirits.

Interment was in the G. A. R. Cemetery, Miami, Oklahoma.

DOCTOR JAMES TATE MASON

Dr. James Tate Mason, Seattle, President of the American Medical Association, died June 20 at the Virginia Mason Hospital of endocarditis with multiple emboli at the age of fifty-four.

Dr. Mason was born in Virginia, May 20, 1882. After graduating from the University of Virginia Department of Medicine, Charlottesville, in 1905, Dr. Mason engaged in the practice of surgery first at Philadelphia, then at Franklin, Washington, and finally at Seattle, where he had practiced continuously since 1909.

His death came a few weeks after the American Medical Association conferred upon him the highest award, and his duties will be taken over by Dr. Charles Gordon Heyd of New York City, first vice-president elected at Kansas City.

RECENT DEATHS

(Insufficient data available for obituary)

Dr. J. C. Ambrister, Chickasha, June 29, 1936.
Dr. Samuel Blair, Apache, June 13, 1936.
Dr. J. H. Linzy, Comanche, June, 1936.
Dr. T. D. Palmer Elk City, June 15, 1936.
Dr. A. M. Ruhl, Edmond, June 27, 1936.
Dr. A. J. Sands Choctaw, June 16, 1936.
Dr. H. Coulter Todd, Oklahoma City, June 25, 1936.

1936 ROSTER

The Roster published in the June issue of The Journal was inadvertently headed "1935" instead of 1936. With the exception of the following names the list was complete to date of publication:

CARTER COUNTY

Cantrell, D. E. Haldton
Cantrell, Jr., D. E. Wilson
Veazy, L. C. Ardmore

CHOCTAW COUNTY

Wolfe, Reed Hugo

COMANCHE COUNTY

Hues, C. P. Lawton

COTTON COUNTY

Stevens, F. G. Temple

JEFFERSON COUNTY

Andreskoski, W. T. Ryan

LATIMER COUNTY

Henry, T. L. Wilburton

OKLAHOMA COUNTY

Bates, C. E. Veterans Administration Facility,
Wichita, Kansas
Graening, P. K. 610 West Ninth St.
Kelly, John F. Medical Arts Bldg.
Kimball, Melvin Webb City
Nunnery, E. E. 2531½ South Robinson
Payte, J. I. Medical Arts Bldg.
Rogers, Gerald 1200 North Walker
Sullivan, Ernest Hightower Bldg.
Trice, S. T. Box 88, Edmond
Wilson, Kenneth J. Medical Arts Bldg.

PAYNE COUNTY

Perry, Daniel L. Cushing

SEMINOLE COUNTY

Black, W. R. Route 3, Seminole
Huddleston, W. L. Konawa
Long, W. J. Konawa
Lyons, D. J. Seminole
Price, J. T. Konawa
Reeder, H. M. Konawa
Shuler, A. C. Seminole
Whittle, C. C. Mesa, Arizona

TULSA COUNTY

Browne, H. S. Medical Arts Bldg.
Hays, Luvern Medical Arts Bldg.
Perry, John C. 618 McBirney Bldg.
Sippel, Mary Edna 1411½ South Troost
Wainright, A. G. 424 McBirney Bldg.

Apologies to Dr. J. C. Wagner, Ponca City, Kay County, whose death erroneously was indicated on the roster by the sign of the asterisk.

Secretaries of the County Societies are urgently requested to mail The Journal information re removals, vacations, and other news items regarding members and their families. This will be of assistance to us in making your Journal a more interesting publication.

RESOLUTIONS

DOCTOR D. LONG

WHEREAS, our fellow member and friend. Dr. D. Long, of Duncan, Oklahoma, who was a member of long standing in our Society, who was called from us May 21, 1936, and;

WHEREAS, his loss is deeply felt by each and every member of this Society and by his legion of

lay friends, because of his many years of practice in Duncan and this vicinity in the medical profession; and

WHEREAS, we join together to mourn the passing to his great reward of this public benefactor.

THEREFORE, be it resolved by the Stephens County Medical Society, that our sincere sympathy be extended to his wife and family.

Stephens County Medical Society,

E. G. King, M.D.

W. S. Ivy, M.D.

Committee.

DOCTOR J. H. LINZY

WHEREAS, it is with deep regret we learn the death of our fellow member, Dr. J. H. Linzy, of Comanche, Oklahoma, who has been a member of the Society for sometime,

WHEREAS, he has practiced in Stephens County for many years and has rendered most valuable service to his community,

WHEREAS, we receive this information with deep sorrow, realizing our loss, and

THEREFORE, be it resolved by the Stephens County Medical Society that a copy of these resolutions be sent to the bereaved family.

Stephens County Medical Society,

E. G. King, M.D.

W. S. Ivy, M.D.

Committee.

DOCTOR GENERAL PINNELL

At a called meeting of the Ottawa County Medical Society, June 18, 1936, the following resolution was presented and unanimously adopted:

"WHEREAS, this Society has received the sad information of the death of Dr. General Pinnell, of Miami, Oklahoma, and

"WHEREAS, Dr. Pinnell for many years has been a member of this Society and rendered through it most valuable service to his profession in the county, and has been recognized by the doctors of this county and state as one of the most beloved members of the medical profession,

"THEREFORE BE IT RESOLVED, that we receive this information with deep sorrow and regret, realizing our loss in both counsel and advice, and

"BE IT RESOLVED, that we extend to the family our deepest sympathy and assure them of our sincere desire to share with them this burden of loss, and

"BE IT FURTHER RESOLVED, that a copy of this resolution be made a part of the minutes of this meeting, that it be published in the Journal of the Oklahoma State Medical Association, and that a copy be sent to the family and to the press of this city."

LEGISLATIVE FUND

On this page each month will appear a report of the remittances received on the allotment of \$10.00 per member made by the Council by direction of the House of Delegates at our last annual meeting. In one column is found the name of the County, next the allotment at the rate of \$10.00 per member and in the last column the amount received.

By this method of tabulation you can see at a glance not only the standing of your own County Society, but the total amount collected in the State.

Each County Secretary will, we are sure, make

every effort to remit the entire quota as soon as possible in order that the Legislative Committee may proceed with its various activities.

County	Allotment	Amt. Paid
Adair	\$ 40.00	
Alfalfa	70.00	
Atoka-Coal	30.00	\$ 10.00
Beckham	140.00	130.00
Blaine	90.00	
Bryan	240.00	110.00
Caddo	240.00	
Canadian	230.00	
Carter	260.00	
Cherokee	30.00	
Choctaw	70.00	60.00
Cleveland	270.00	
Comanche	190.00	
Cotton	90.00	90.00
Craig	150.00	80.00
Creek	330.00	150.00
Custer	230.00	180.00
Garfield	420.00	
Garvin	150.00	
Grady	230.00	
Grant	40.00	
Greer	120.00	
Harmon	80.00	
Haskell	60.00	
Hughes	170.00	
Jackson	160.00	
Jefferson	110.00	
Johnston	10.00	
Kay	370.00	
Kingfisher	90.00	
Kiowa	170.00	
Latimer	40.00	
LeFlore	160.00	90.00
Lincoln	150.00	
Logan	200.00	
Major	30.00	
Marshall	50.00	
Mayes	110.00	
McClain	60.00	
McCurtain	70.00	
McIntosh	60.00	60.00
Murray	110.00	
Muskogee	520.00	10.00
Noble	40.00	
Nowata	50.00	
Okfuskee	150.00	
Oklahoma	2740.00	630.00
Okmulgee	320.00	
Osage	220.00	
Ottawa	310.00	
Pawnee	100.00	90.00
Payne	260.00	140.00
Pittsburg	360.00	
Pontotoc	300.00	290.00
Pottawatomie	330.00	
Pushmataha	80.00	
Rogers	120.00	
Seminole	320.00	
Sequoyah	10.00	
Stephens	220.00	
Texas	50.00	
Tillman	100.00	
Tulsa	1980.00	
Wagoner	40.00	
Washington	250.00	190.00
Washita	120.00	
Woods	190.00	
Woodward	260.00	150.00

NOTE—Corrections and additions to the above list will be appreciated.

BOOK REVIEWS

DISABILITY EVALUATION: THE PRINCIPLES OF TREATMENT OF COMPENSABLE INJURIES. By Earl D. McBride, B.S., M.D., F.A.C.S. Assistant Professor in Orthopedic Surgery, University of Oklahoma School of Medicine; Attending Orthopedic Surgeon at St. Anthony's Hospital; Associate Orthopedic Surgeon to Wesley Hospital; Visiting Surgeon to W. J. Bryan School for Crippled Children; Chief of Staff to Reconstruction Hospital, Oklahoma City, Oklahoma.

Three hundred seventy-four illustrations. Cloth, price \$8.00. J. B. Lippincott, Philadelphia.

Of interest to all doctors doing traumatic surgery and of particular interest and value in compensatory cases is this new book by Dr. McBride. The subject matter covers in detail practically all possible injuries and degrees of impairment of function with evaluation in percentage. There are many illustrations showing the exact procedure in arriving at definite conclusions relative to the degree of residual disability, thereby giving a basis upon which doctors, who strive to be honest in their testimony before Industrial Commissions, can come to sound conclusions. By the use of this book a large amount of guess work can be eliminated.

All physicians and surgeons can do well to add this book to their library and by consulting it make their opinions as to traumatic disability more intelligent, thereby adding a degree of fairness to all parties concerned.

THE KINDLY DOCTOR*

A lordly man whose life for years was hurled
At foes of frail mankind, one who ne'er winced
At midnight hour or wintry miles; nor furl'd
His flag of hope in time of need; convinced
That supplicant, rotten or right, cased
In mortal combat with some dire disease
He rode o'er rugged road or pathless waste
To help, to heal, regardless of the fees.
His day of destiny came round too soon
And choked a myriad friends or more with tears.
The service words were like an ancient rune;
It hushed the sobs and banished doubts and fears.
The rune reviewed his selfless consecration,
And found in it God's noblest revelation.

(Rev.) John Watkins Moseley, Jr.,
Duncan, Oklahoma.

*Dedicated by the author to Dr. D. Long deceased, recently of Duncan, Oklahoma. For fifty years Dr. Long, a pioneer physician of Stephens County, Oklahoma, sanctified human service for suffering humanity with a heavenly disinterestedness.

Renal Insufficiency Developing During Prolonged Use of Alkalis

J. Murray Steele, New York (Journal A. M. A., June 13, 1936), reports a case in which the use of alkali through a span of many years for the relief of pain due to a duodenal ulcer was followed eventually by the passage of albumin, red blood cells and casts in the urine, and the appearance of severe renal insufficiency, as indicated by elevation of the urea nitrogen of the blood and marked decrease in the ability of the kidneys to excrete urea and to concentrate the urine. Recovery followed discontinuance of the use of alkalis. The usual neurologic manifestations of alkalosis, nausea, headache, nervousness and tetany were absent. Fatigue and nocturia were the only complaints.

ABSTRACTS : REVIEWS : COMMENTS and CORRESPONDENCE

SURGERY AND GYNECOLOGY

Abstracts, Reviews and Comments from
LeRoy Long Clinic
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The Treatment of Abortion. By J. L. Reycraft and S. Foster Moore, Jr. Surgery, Gynecology and Obstetrics, June, 1936, Pg. 989-994.

These authors have reviewed the 445 cases which were observed at Cleveland City Hospital from July 1, 1932, to January 1, 1935. There remains great controversy over the proper treatment of abortion. In this series there has been no strict adherence to either the ultra conservative or the more radical field of management, but there has been apparent individualization of patients with more or less broad rules. It is the application of these broad rules which make this report of interest.

These patients are divided into 325 incomplete abortions, fifty complete abortions and seventy inevitable abortions.

These authors call attention to those who maintain that in the presence of fever and malodorous discharge, conservative measures of a supportive and palliative nature should be followed strictly. However, they feel that when the various types of cases are considered, it will be seen that to empty the uterus without too much delay will possibly be of great benefit in certain cases. They feel that foremost of these are the instances in which hemorrhage may be so profuse as to be an immediate danger to the life of the patient and that the removal of the products of conception allows the uterus to contract and the bleeding to cease. They also call attention to the fact that many patients entirely fail to respond to palliative measures and that removal of the necrotic infected material in the uterus frequently stops the absorption of toxic material and causes a spectacular crises with a rapid return to normal.

Although it is desirable to complete an inevitable or incomplete abortion as soon as possible, they recognize that invasion of the uterus in the face of active infection is not without certain danger to the patient. It is probable in certain situations only that this added risk is justifiable. They also feel by a study of their mortality and morbidity figures that there is most likely an optimal time to complete the abortion even after the infection has subsided.

The treatment employed at the Cleveland City Hospital is briefly but well described. It is observed that the patients admitted to this hospital are in serious condition usually, many being severely exsanguinated, extremely toxic or even moribund. First attention is always directed to supporting the patient generally. Usually, unless it is thought that the abortion is only threatening, oxytocics are administered at once. As a rule the patient is given every opportunity to complete the abortion spontaneously.

AFEBRILE ABORTIONS: "If not complicated by serious blood loss, these cases are easily managed. Often the abortion is spontaneously completed within forty-eight hours. If such is not the case, the uterus is emptied by the least traumatizing procedure. Usually this can be done without further dilating the cervix and without using the sharp curette. Our experience has shown that this can be done without being followed by serious morbidity."

INFECTED ABORTIONS: After a brief description of this classification it is noted that "the patient who shows slight or no fever, low blood pressure which cannot be explained by blood loss, feeble pulse and extreme prostration, almost always responds poorly to all therapy." They feel that these cases should be suspected of infection by virulent streptococci and all intra-uterine manipulation possible should be avoided. They feel less concern for the patient who shows high fever, chills, full bounding pulse and does not appear so ill. In these latter patients the uterus is probably invaded by the usual saprophytic organisms.

The infected case is generally treated conservatively. "If hemorrhage is not severe and the patient responds satisfactorily to palliative measures, time is allowed for the temperature to subside. Frequent small transfusions of whole blood have proved excellent supportive treatment in patients with severe infection. When the fever has been lower than 100.4 degrees F. for twenty-four to forty-eight hours and it is felt that the uterus is not empty, operative completion is done.

"Occasionally that case is seen in which it is felt advisable to empty the uterus in spite of an existing febrile state. Not infrequently the response is favorable, but it must be heeded that such a step definitely increases the patient's chances for morbidity, which may be serious. It must not be undertaken unless it is felt that the patient's general condition warrants such a risk. It will be seen in Table II that this was a not infrequent procedure in this series, but our morbidity rate in these cases is tending to result in few patients being handled in such a manner."

INEVITABLE ABORTION: "These cases are peculiar only in that an effort should be made to save the pregnancy, if possible."

The treatment of complications is considered by giving some general observation as to the manner with which these are dealt. So considered are hemorrhage, sapremia, septicemia, endometritis, parametritis, pelvic cellulitis, pelvic peritonitis, pelvic abscess, and phlebitis.

In consideration of morbidity and type of operative procedure the following quotation is of interest:

"It is noted that this morbidity was seen in patients who were afebrile for at least twenty-four hours before operation. It is outstanding that those cases in which the least was done showed the lowest morbidity in spite of the fact these were most often the recently infected cases. When the uterus was emptied without dilating the cervix and without using a curette, the morbidity was only 3.5 per

cent. Dilatation of the cervix and curettement of the uterine wall gave a morbidity of 7.7 per cent. A notable point in the study is that dilating the cervix carries with it a higher morbidity than gently curetting the uterus."

These authors feel that their study has confirmed an opinion that the optimal time to complete an abortion, if at all, is when the patient has been afebrile for forty-eight to seventy-two hours. They feel that "nothing is to be gained, usually, by delaying longer, and to invade the uterus earlier carries a greater risk for the patient."

In this series there were twenty-one deaths or a gross mortality of 4.72 per cent. Seven of these were moribund on admission with death occurring within twenty-four hours after admission. Only three deaths occurred following operative treatment in the Cleveland City Hospital.

It would seem advisable to quote the summary and conclusions of this study which has tremendous practical importance.

"1. A study of 445 cases of abortion observed at Cleveland City Hospital during a period of two and one-half years is presented. Over this interval the method of treatment was fairly uniform and affords suitable opportunity for appraisal of results.

"2. The general tendency in treatment is toward a policy of non-intervention. It is recognized that invasion of the uterus, especially in the face of active or potential infection, may be exceedingly hazardous. However, it is believed that circumstances justify this risk in some instances.

"3. The importance of blood transfusions as a life-saving measure in extreme exsanguination and as a therapeutic procedure in the presence of infection is properly stressed.

"4. Intra-uterine manipulation is avoided in all cases if practical. Opportunity is allowed for spontaneous completion unless hemorrhage is severe or other conditions warrant immediate intervention. However, if the abortion is still incomplete after the patient has been afebrile for forty-eight hours, it is thought that there is no advantage in delaying completion for a longer time.

"5. Of the 445 cases observed, 272 were treated by some type of operative evacuation of the uterus. It is shown that the optimal time to empty the uterus, when infection has been present, is after the temperature has been below 100.4 degrees F. for forty-eight hours. It is important to carry out this procedure with a minimum of trauma, avoiding dilatation of the cervix and curettement if possible. When the uterus is emptied at the proper time in properly selected cases and with minimal trauma, the morbidity following operative procedures is not excessive and is of a benign nature.

"6. This series presents a total of twenty-one deaths—a gross mortality of 4.72 per cent. One-third of these deaths occurred within twenty-four hours of the patients' admission to the hospital. Only three followed operative treatment at City Hospital.

"7. It would appear from this study that the mortality and morbidity in accidental or criminal abortion could be reduced materially by more intelligent management of each case from its onset. Such management would include the following of certain principles which experience has shown may not be violated without ill results."

COMMENT: Saprophytic organisms have been widely credited as the etiological factor in patients with mal-odorous discharge, fever and toxemia. In this direction the work of Brown of St. Louis deserves attention. In a series of five hundred consecutive abortions both aerobic and anaerobic cul-

tures have been made from intra-uterine material. He has found anaerobic streptococci in a very large percentage of the patients which are usually accused of saprophytic infection.

It is largely upon this basis, added to his results, that he advocates emptying the uterus upon admission of the patient to the hospital.

Vitally important is the caution that the minimum of manipulation yields the best results when operative interference is employed. The removal of necrotic products of conception by gentle use of a sponge holding forcep through a patulous cervix is usually quite sufficient and the temptation to employ a sharp curette should always be avoided.

Unless it is thought that the abortion is only threatening, oxytoxics are of great assistance in checking bleeding and probably in lessening the toxic absorption. However, with the use of the more potent oxytoxics, one should carefully consider and observe patients for toxic symptoms.

From the information available at the present time and from my experience, my reaction to the treatment of abortion is a "middle of the road" one, not far dissimilar from the practice employed in this present series reported from the Cleveland City Hospital. Individualization within the broad general rules and avoidance of ultra-conservatism or severe radicalism impresses one as the logical means of managing this very prevalent and troublesome condition. Wendell Long.

Multiple Symmetrical Lipomatosis. By J. K. Miller, Ingleside, Neb. *The Journal of the American Medical Association*, June 13, 1936, Pg. 2059.

The author reports multiple symmetrical lipomata in the cases of three patients in the same family—a mother, a son and a daughter.

The mother was a white woman sixty-three years of age. Small, soft tumors appeared over the body during five years following a sudden cessation of menstruation at the age of thirty-five. There were many on the scalp, and a few on the lower part of the legs. They were not painful. They were not attached to the skin.

The son was examined when he was thirty-four years of age. There was a history of an injury of the left cheek by a baseball at fourteen years of age. Three years later there was a soft tumor at the point of injury and a second soft tumor under the left upper eyelid. A tumor appeared in the roof of the mouth about the same time. It grew slowly, and when the patient was thirty-four it was about the size of a hen's egg. Examination after surgical removal showed a preponderance of fat cells of a mature type, there being at the same time interlacing bundles of mature fibrous tissue.

The daughter was examined at the age of thirty-six. She had noticed soft tumors about different parts of the body since the age of twenty-six. There was a history of an operation for the removal of a large abdominal tumor at the age of thirty-two. The pathologist reported lipoma.

There were seventeen demonstrable tumors in the case of the son and the same number in the case of the daughter. The number in the case of the mother was not ascertained accurately, but was thought to be much greater than in either the son or the daughter.

The author remarks: "Although there was no histologic evidence of neurogenic origin, the distribution of the tumors in the son and daughter suggests a possible configuration following the peripheral nerve routes."

There is a reference to a compilation of 19,129 tumor cases by Pack and LeFevre, of which 2,564

were benign growths, the lipomata constituting 4.3 per cent of them. Another reference is to a report to Adair in connection with the distribution of 352 lipomata in 134 patients. In this series only two tumors were observed above the neck, two below the knees and two on the hands. The ages of the patients were between thirty and fifty-five. Seventy-five per cent were females. LeRoy Long.

Mechanics of Uterine Support and Position. By William F. Mengert. *American Journal of Obstetrics and Gynecology*, May, 1936, Pg. 772-782.

The best possible understanding of the mechanics of uterine support and position is necessary as a basis for proper advice and treatment in the care of patients of prolapse of the uterus. This experimental study is a very interesting one. The summary and conclusions follow:

"1. The following experiment was performed on eight female cadavers, none of which had prolapse. After attaching a one kg. weight to the cervix, the paired structures attached to the uterus were severed in varying sequences and the resulting uterine descent measured.

"2. Section of the round, ovarian, infundibulopelvic, and the upper third of the broad ligaments hardly affected the position of the uterus in the pelvis.

"3. The pelvic floor, although it was never incised, did not hinder experimental prolapse of the uterus, and therefore could not have contributed to uterine support in any of the eight subjects.

"4. Section of the parametrial (lower two-thirds of the broad ligament) and the upper two-thirds of the paravaginal tissues allowed an average uterine descent of 10.5 cm.

"5. Marked descent of the uterus amounting to actual prolapse never occurred so long as any part of the upper two-thirds of the paravaginal and/or lower two-thirds of the parametrial tissues were intact. Of these two arbitrary divisions of the urogenital fascia propria, the paravaginal tissue seemed to be slightly more important, for its division allowed an average uterine descent of 6.9 cm. as compared with 3.6 cm. following division of parametrial tissues."

COMMENTS: The results of this experimental study are entirely within keeping with the experiences of the surgeon who has done complete hysterectomies and operations for prolapse of the uterus. In performing complete hysterectomies, it is only upon the division of the cardinal ligaments and the paravaginal tissues that the uterus perceptibly moves its position under tension.

In operations devised for the cure of uterine prolapse, including vaginal hysterectomy, interposition operation, the so-called Manchester operation, etc., success will not follow unless proper attention is paid to the cardinal ligaments and the paravaginal tissue. Wendell Long.

Adequate Surgical Masking: Problem and Solution. By Edward G. Waters. *The American Journal of Surgery*, June, 1936, Pg. 474-477.

The literature is reviewed to demonstrate the inefficiency of the average gauze mask. A mask, the description of which follows, was devised by the author. The article is well illustrated.

"A mask is made of a transparent, impermeable, light weight, non-combustible substance, a cellulose derivative called "Plastacele," the upper edge of which is wedged in a pliable aluminum band in order that it might be bent to fit the shape of the wearer's nose. It is held in place by ear

pieces, or cotton tapes tied around the head, in the usual manner of tying masks. That part coming under the chin is so shaped as to catch perspiration drops."

A small series of experiments using four-ply gauze masks and the author's mask showed that the author's mask was far more efficient in the prevention of dissemination of bacteria.

COMMENTS: The question of proper masking is a tremendously important one which has probably received too little attention. Whether this particular innovation is the proper solution or not, serious thought upon this question will undoubtedly have its effect upon improved performance and outcome of surgical procedures.

Wendell Long.

Relation of Pathologic Changes of the Intervertebral Disks to Pain in the Lower Part of the Back. By David Sashin. *New York. Archives of Surgery*, June, 1936, Pg. 932.

Referring to the important work of Schmorl, there is a description of the anatomical structure of the intervertebral disk. This corresponds with the description found in many recent articles. I referred to one of them in an abstract prepared for this section a couple of months ago. Briefly, the nucleus pulposus and the annulus fibrosus, together with two thin plates of hyaline cartilage which separates the disk from the contiguous vertebral bodies, are of prime importance.

Attention is directed to the fact that while, on the whole, the disks form about one-fourth of the length of the spine, they form about one-third of its length in the lumbar region. Attention is directed to the absence of blood vessels in the disk, which receives its nourishment from the bone marrow of the bodies of the vertebrae by diffusion.

Pathologic changes are seen for the most part after the third decade, and increase with age. Among the changes listed, there may be a small herniation of the disc into a contiguous vertebral body, vascular infiltration of the substance of the disk, fibrous replacement of nuclear tissue, brown degeneration, calcification of the nucleus, with shrinkage and ossification in late stages. Schmorl is quoted to the effect that herniation of the disk is found in thirty-eight per cent of autopsies. Notwithstanding the frequency of these changes in the disk, there will be no roentgenologic evidence of it unless the pathology has continued to the point where a sclerosing layer of bone is formed about the disk.

Emphasis is placed upon the fact that the formation of a herniation makes it possible for the extension of blood vessels into the substance of the disk, and this is often followed by the development of fibrous tissue which replaces the normal substance of the nucleus pulposus, resulting in degeneration and shrinkage.

The statement is made that the degenerated changes of the disks are due mainly to the wear and tear of daily functional activity. The result is that there is a strong tendency on the part of those who perform heavy physical labor to degenerative changes in the disks, with modified flexibility of the spine. At the same time, there may be ability to compensate until a slight trauma "such as lifting a heavy object, a sudden twist or a mis-step, precipitates a train of symptoms and physical signs that completely incapacitate the person" It is believed that trauma, although slight, may produce a compression of a diseased disk.

In discussing the clinical picture, the author states that many of his patients had pain radiating

down the back of the lower limbs along the course of the sciatic nerve, but that the "main symptoms complained of were dull, aching pains in the lower part of the back." There was frequently a history of a slight injury, like a sudden twist or the lifting of an object.

Physical examination shows that the patient walks guardedly. The lumbar spine is rigid, with restricted motion and tenderness over the lumbo-sacral junction. "There was often tenderness over the gluteal region, the area supplied by the superior gluteal nerve."

Roentgenograms show narrowing of the disk, narrowing of the intervertebral space and flattening of the lumbar spine. At the same time, the lumbo-sacral angle is increased "and often a separation of the articular facets can be seen on the oblique views." Degenerative changes of the disks when associated with herniation of the disk into the vertebral bodies could be noted on the roentgenogram as small areas of lessened density surrounded by a sclerotic layer of bone. Calcifications of the nucleus pulposus were distinctly visualized."

The treatment advised by the author is an attempt to reestablish lumbar lordosis and support the spine through the application of a plaster of Paris jacket. It is suggested that realignment might be produced by fixation over a convex support for several weeks, but the author states that he prefers gentle hyperextension of the spine while the patient is under general anesthesia after which the plaster of Paris jacket is applied from the upper part of the chest to the pelvis. He makes the following important statement: "No forcible manipulation was used." Where the spine is rigid and a fixed deformity is present there is no attempt at forcible correction. LeRoy Long.

PLASTIC SURGERY

Edited by GEORGE H. KIMBALL, M.D., F.A.C.S.
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Amputation of the Fingers. J. Daniel Willems, M.D., F.A.C.S., Chicago, Illinois. From the Surgical Department of the Northwestern University Medical School. From S. G. & O., May, 1936.

The author describes the technique for amputations of fingers which has as its principal purpose reduction of infection and the formation of useful stumps.

In preparing the finger for operation, cleansing of the hand of grease and dirt should be done in the usual way and antiseptic may be applied to the skin up to the area crushed, but not to the wound itself.

Amputation through the distal phalanx may often be avoided by transferring a full thickness skin graft from the thigh and covering the severed end, particularly when the injury consists of severance by a sharp instrument or cutting tool. Another method which



FIG. 1. Method of draping the finger for operation. The hand is placed upon a sterilized towel in the manner shown in the insert. The towel is folded back isolating the finger but covering all the other parts of the hand and wrist when it is folded over the back of the hand.

is occasionally found successful, especially when the cut is through the nail, is a plastic bridge flap from the finger itself (Fig. 2). A small incision is made across the front of the finger a short distance from the severed end, and then the tissue is drawn over the end of the stump and sutured to skin. The resulting defect is then immediately covered by a thin graft. Such repair has the advantage of placing an adequate pad over the end of the bone and of preserving the stump to its fullest possible length.

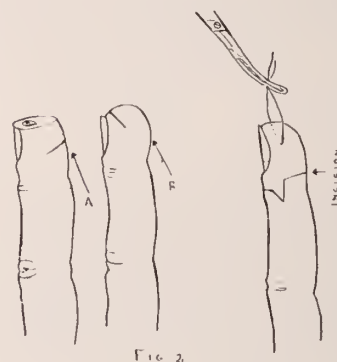
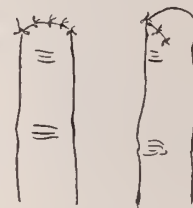


FIG. 2. Method of repairing the tip of a finger by plastic bridge flap. A—Skin incision partly encircling the finger. B—Plastic flap drawn over the end of the stump, covering the tip, but leaving a small skin defect at the point of the arrow. The defect is covered with a skin graft.

Amputations which arise in connection with crushing injuries should be done immediately. Under no circumstances should undercutting or upward dissection of the crushed tissues be done.

The author describes some fine points in technique which will be helpful to anyone doing this type of work.

FIG. 3. Method of amputating the distal phalanx. A—Suture passed through the crushed tissues for traction and control; lines of incisions. Note slight level of the dorsal and volar incisions, and the notch joining the two incisions on the side. B—Suture of the stump. Note particularly the deep central suture, which is placed first, and the two deep lateral sutures, which must include the digital arteries and are, therefore, directed laterally. Note also the two superficial coapting sutures. C—Side view of sutured stump. Note position of the suture line well back on the tip of the stump and the adequate soft pad over the end.



Movements of the Soft Palate: With Special Reference to the Function of the Tensor Palati Muscle. W. E. M. Wardill, M.D., B.S., F.R.C.S., and James Whillis, M.S., M.D., F.R.C.S., Newcastle-upon-tyne, England.

The authors have been studying the palatopharyngeal valve mechanism for some years and have never been entirely satisfied with their own interpretations or with the accounts given by others because, up to the present it has been impossible to observe the palatal movements except from the oral aspect.

Recently a patient who had been operated for carcinoma involving the lateral nasal wall presented so that they were able to look into the palate through the opening left by the operation. After the operation afforded the authors, the authors give us the following conclusions:

The movements of the palate in all phases of its activity are difficult to interpret and correlate with individual muscles. The diameters of the normal nasopharynx are very much smaller than might be imagined from the examination of a series of cases with unrepaired clefts of the palate. All movements are extremely speedy and, on superficial examination, little difference is observed be-

tween the nasal resonants and the explosive consonants. But in general it may be said that the greater the explosive effort required for the production of a sound, the greater is the elevation of the palate and the more firm the nasopharyngeal closure. It would seem that closure is considerably assisted by the heaping up of the mucosa by underlying muscles, and it can be imagined that, as has been found in clinical experience, complete nasopharyngeal closure is possible even with an almost completely immobile soft palate so long as the sling of action of the levators remains intact. The tensor palati would appear to have little to do with the speech mechanism, its activity being strongest at the time of deglutition, and it is for this reason that it must be regarded as a muscle, the function of which is to propel the bolus over the back of the tongue.

COMMENT: Dr. Dorrance has had a similar opportunity to observe the movements of the palate in a patient similar to the patient described by the authors.

It has been an observation of mine that speech in some children seems to be little affected by closure of the palate. In many others the speech has been altered entirely for the better.

Surgery, Specialty Surgery, and Plastic Surgery. An Editorial by Vilray P. Blair, Plastic Surgeon, St Louis, Missouri.

(At the outset, I thought an abstract could be made of this article, but after close study I decided to copy it as it appeared in S. G. & O., May, 1936.)

The term "general" as applied to a surgeon indicates neither the quality of his work nor the extent of his endeavors, but implies a basic grasp of medical and surgical principles that permits development along any chosen line of practice, as well as a dominant concern for the activities and the well-being of the body as a living unit and for its subjective functions. Because the machinery of these vitalizing subjective functions is housed in the cavities and in the peripheral bulk of the whole body, the devotees were called "general surgeons," in distinction to the on-coming specialist who is more interested in one or more objective functions such as sight, hearing, locomotion, reproduction, esthetic appeal, etc. However, all body-parts and functions are so interdependent in action and being that in their care independent fields of practice cannot obtain. The buccal mucosa, the eye, or the pharynx may first manifest symptoms characteristic of a distant lesion, and the otolaryngologist, for instance, assumes responsibility in commonly occurring infections prone to extension into the cranial cavity, the lungs, or the blood stream.

Breadth of vision is essential to good practice in any field and is fostered by broad study, broad opportunity, and broad observation. Concurrently these also foster realization of the value of concentrated effort, and in this realization all specialization has its inception. All surgical specialties rest upon fundamental principles that were guiding formulas to the older surgeons and still are to those of the present day.

It may be advanced, even while lacking statistical confirmation, that there is more effective specialization practised within than outside the general surgical field, for few, if any, responsible surgeons will today claim to do well all kinds of surgery in all parts of the body. One of the most widely useful instances, and a common one, is the surgeon who treats only the ordinary affections, but in nearly all parts of the body. He who limits his care to any and all affections of certain individual structures or geographic areas is another example of a general surgical specialization, and a third is

he who does a particular type of surgery, or treats a particular type of disease, deformity, or injury in one, any, or all areas.

These are instances of discretionary self-limitation which in practice, averages less sharply defined than when it is a mandate of a conventionalized specialty. The earlier concentration in effort that has become the accepted procedure of the latter begets a greater exactitude which is compensatory just so long as the purpose and scope of this or that particular limited training is adhered to. However, in all lines of surgical endeavor a few men will show a flair for outstanding constructive work, and in certain fields the results may be so striking as to bring a disproportionate return in recognition and opportunity. Then, unless this exaggerated confidence is met with honesty and sound judgment, disappointment or disaster may ensue. Such sequences are not unknown in connection with the so-called new, over-publicized and often half-baked "plastic surgery" which, as a specialty, concerns itself chiefly with surface contour, confines its activities to no particular area, and to which none of the segregated specialties can substantiate proprietary rights. It does conserve chiefly the objective functions, sight, hearing, ease of movement, reproduction, esthetic appeal, etc., but it is also directly or indirectly applicable to many of the subjective functions. The basic factors which influence healing are the same in all types of surgery and, except for simple ligations, incisions, and guillotine amputations, the transfer and molding of the tissues are an essential part of nearly all surgical operations. Further, as many of the steps may tax the subjective functions to the limit of endurance, this surgery can be best and most safely done only when shepherded by all possible precautions that surgery can provide. The title "contour surgery" would be more individualistic, but our analysis is not given to provoke controversy over an accepted name but rather to accentuate the relation of this specialty to the whole surgical scheme, and that when practiced on a broad scale it should be classed as a general surgical specialty. Orphaned in the passing of the older surgery, later recognition was long withheld, owing partly to the distractions incident to the establishment of the aseptic era, and to a greater degree to the persistence of a very old and deep-rooted prejudice of the surgeon against prostituting his art to esthetic appeal. It took a World War to awaken a rather unprepared profession to the need of and the opportunity for this work being well performed. This war need was partly met by a few general surgeons who had previously fancied this work, but chiefly by individuals among the rhinologists, the gynecologists, and the oral surgeons, whose more exacting technical habit made a convenient foundation upon which to build. Working in close association with the general teams they quickly learned to spread their gift widely and have remained outstanding figures in post-war civilian practice.

In spite of later conscientious efforts to give on-coming aspirants this necessary double training, no widely applicable and satisfactory plan has yet been emphasized. There is necessarily something approaching a gift back of its higher flights which cannot artificially be called into being, and without a natural flair the work cannot go beyond standardized mediocrity. Given the combination of ability and the will-to-do, both quality and facility of production can be stepped up indefinitely by training and circumstance.

Can we not, in controllable civilian practice, duplicate the features that proved productive in the haphazard of war surgery? There is the same need with also the same material, and equally

appropriate circumstance: an increasing multitude demanding surgery that might better their social, business or industrial circumstances. And there are surgeons anxious to meet this need, and everywhere highly organized surgical services in which opportunity and non-hampering guidance could be given with mutual profit. The first essential is the choice of material, and in this the ring of the metal, not the mold in which it has been cast, should be the chief guide.

Next in importance is maintenance of close and mutually satisfactory working cooperation both with the general surgeons and the other surgical specialists. This association will also widen the potential sources of future practice. It is particularly important in those borderline cases which overlap—the no man's land frequently lying between more conventionalized spheres of practice, where the patient may become the victim either of unconscious neglect or misdirected enthusiasm. Thirty-six per cent of the cases coming to our own service last year could have been ticketed as surgical junk as the result of our own or the other man's lack of foresight in planning or execution, or both. Group cooperation begets a surgical spirit, and the latter is somewhat adverse to the habit of sequestered operating especially by those who avail themselves of the opportunity of other clinics.

Some, by choice, work on very narrow lines, their success depending upon personality, skill, salesmanship, and reputation. Quite a number do this as routine work in a special field, but for the oncoming the greatest opportunity will be for those who are prepared to do the work in any area. For the otherwise qualified man, limited in basic surgical training and experience, nothing can give more comfort and safety in a gradually expanding field than the cooperation of a trained house staff. The latter should also prove the most fruitful source from which to choose the associate who is to extend the number of his productive years; and the wise man will do this before his utility becomes but a name. If he waits until he has only his place to give, then he cannot complain should the associate show anxiety to replace him. Reading, personal experience, and clinic visiting, will register in the long run, but acquired academic degrees bring nothing more than entree to these training camps, for operative surgery is essentially a post-graduate study.

To be productive this staff assignment must be a consistent fact, not merely nominal, and, even while developing, the incumbent must eat and might aspire to rearing a family. An empty stomach is a great urge to industry but may tend to lower quality; therefore, some sort of provision for maintenance might not only be helpful but necessary.

There has been a disposition to relegate this work to housemen or to those considered not quite equal to making good on real surgery, or to regard it as purely a matter of technique, either of which is unfortunate. While most surgery gets by on functional results, this must stand or fall not only upon its approximation of normal or ideal surface and contour, but also upon compassing a psychology that may be most difficult either to interpret or to satisfy. The casual request for this or that may be a timid expression of the deepest heartfelt desire. Usually our best is none too good, and often the very best could not really satisfy.

In spite of the above, the effort is usually well worth while, if we evaluate results in terms of remunerative employment, restored self-confidence, and of greater accomplishment; in terms of compensation and liability expenditures; and in terms of better health and of happiness to be won through surgery.

ORTHOPAEDIC SURGERY

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Thoughts on the Relief of Sciatic Pain. Clarence H. Heyman, M.D., Cleveland, Ohio. *Journal Bone and Joint Surgery*, Vol. XVI, No. 4, pp. 889-894, October, 1934.

This article sets out a procedure very similar to that of Ober's of Boston for the relief of sciatic pain. The author points out that cases with pain in the sacro-iliac and sciatic nerve region go a long period of time with chronic disability. He has received such spectacular relief in two cases by the operation which he has devised, he believes we will now be able to cure the condition in a much shorter time. He points out that in tuberculosis and certain crushing injuries that a fusion of the sacro-iliac joint is necessary. However, he has observed that in doing the Smith-Petersen or Campbell method in fusion of the sacro-iliac joint, the patient has frequently shown prompt relief on the day following the operation and he does not believe this could possibly be due to fixation of the sacrum, nor to the post-operative fixation in plaster since in several cases he has secured prompt relief without fixation and plaster.

His operation is as follows:

A curved incision following the antero-superior spine and extending to the postero-inferior spine; this incision is carried down to bone. The iliac origin of the gluteus maximus muscle, arising from the lateral lip of the crest of the ilium and from the postero-superior spine, is pushed aside subperiosteally down to the superior gluteal line of the ilium, and the dissection is carried down to the upper margin of the great sciatic notch. The subperiosteal dissection is then continued along the medial surface of the postero-superior spine to the sacrum, and inferiorly to the postero-inferior spine. In this way, the postero-superior spine and the lateral aspect of the posterior third of the ilium are completely denuded of ligamentous as well as muscular attachments. This completes the operation, and the wound is closed. No post-operative fixation is recommended. If the results obtained in the two cases reported are confirmed by others, the usefulness of this operation is obvious. It is quickly done and convalescence is short.

CONCLUSIONS: Since sciatic pain was relieved promptly and permanently by subperiosteal stripping of the gluteus maximus muscle and ligaments from the postero-superior spine of the ilium in the two cases here reported, the method is worthy of consideration. Two cases, of course, prove nothing, but they are provocative of thought. There appears to be scientific basis for the method, although this is not well understood. It is understood, of course, that the author does not deny the existence of intra-articular sacro-iliac lesion, to which this method does not apply.

Well Leg Traction as an Aid in the Correction of Some Stereotyped Orthopedic Deformities. J. Warren White. *Southern Medical Journal*, XXIX, 45, January, 1936.

Besides the employment of this apparatus in fresh fractures the author has found other uses.

After a hip fusion it is of value in maintaining abduction; only minimal traction is applied. The apparatus also aids in correcting lateral curvature of the spine by maintaining a tilted position of the pelvis. It is also used to correct adducted hips which cannot be corrected following manipu-

lations or osteotomies, in spite of extensive myotomies and capsulotomies. It is of particular value in cases of poliomyelitis with bilateral hip flexion; however, care should be taken not to dislocate the adducted hip. This apparatus is also of great aid in cases of acute suppurative arthritis, especially in desperately ill patients and as an immediate post-operative dressing of an arthroplasty of the hip.

In many cases of pathological dislocation of the hip reduction will take place spontaneously—that is, without manipulation—when this apparatus is used. It also permits contracted scars to be stretched. This apparatus may be used in reverse—that is, to cause pressure instead of traction—and may be employed to insure good approximation after resection of the knee. Too much pressure should not be used, as it has been found by Key to be harmful.

The disadvantages of this apparatus are also mentioned.

Open Reduction for Fractures and Dislocations: Indications and Methods. Howard R. Mahorner. *Southern Medical Journal*, XXVIII, 993, November, 1935.

Open reduction is the method of election in cases of fracture of the patella or of the olecranon with wide separation of the fragments, depressed fractures of the skull, and fractures of the neck of the femur in the aged. In the latter type, fixation is obtained by wood screws.

Open operation is also indicated in cases of fracture or dislocation which cannot be satisfactorily reduced by other methods, as well as in cases of mal-union and non-union. One-fourth of the cases requiring open reduction are due to faulty initial treatment. The Lane technique diminishes the incidence of infection. Prolonged immobilization gives better end results than the early removal of splints and the use of physio-therapy, except in fractures into the joints and in elderly persons.

INTERNAL MEDICINE

Edited by C. E. Bradley, M.D., Medical Arts Building, Tulsa; Hugh Jeter, M.D., 1200 North Walker, Oklahoma City

By HUGH JETER, M.D.

The Therapeutic Action of the Nucleotides: The Treatment of the Whole Blood Picture With Ferrous Adenylate. Simon L. Ruskin, M.D., and Elihu Katz, M.D., New York, N. Y.

The authors report that they have been able to fractionate the large nucleic acid molecule into four principal products: adenine nucleotide, guanine nucleotide, cytidilic nucleotide and uridylic nucleotide. Adenine nucleotide and guanine nucleotide have been found to resemble, in structure, caffeine and stimulative in action as follows:

1. Stimulates reticulo-endothelial system, and induces leukocytosis.
2. Increases coronary circulation.
3. Participates in carbohydrate metabolism.
4. Participates in muscle metabolism.
5. Acts as a coenzyme.
6. Is a glandular stimulant.

The cytidilic nucleotide and uridylic nucleotide were found to resemble phenobarbital and depressives in action as follows:

1. Precipitates toxins and binds toxalbumin.
2. Induces leukopenia on injection.
3. Inhibits bacterial growth.
4. Is antiseptic in stronger dilutions.
5. Acts like barbiturates on metabolism.

Dr. Simon L. Ruskin has synthesized all the metal and metalloid salts of adenylic and guanylic acid as well as the metal and metalloid salts of cytidilic and uridylic acids, and has found ferrous adenylate to be a stable non-toxic, readily soluble, non-irritating substance with a neutral pH, and which may be used for intramuscular as well as intravenous use.

It is pointed out that Rothmann showed the normal blood to contain fifteen to eighteen mg., per cent nucleotide, with low values found in anemia and high values in polycythemia. It is considered a pro-enzyme.

Clinical aspects were studied by Dr. Elihu Katz. Over a thousand injections of the ferrous adenylate were given and no untoward local or general reactions were observed.

For iron therapy one-half grain of this drug given parentally seems to correspond in effectiveness to ninety grains given by mouth. The results of seventeen cases are shown in the chart and appear to be strikingly good.

White blood corpuscles are also increased. This seems to have been also observed by other investigators. The authors also observed that in all cases the patient experienced a sensation of exhilaration and a mild flushing of the skin during the several hours following the injections.

COMMENT: Further observation on these products and their physiological effects should prove very interesting. The drug appears not yet to be on the market but is being studied by the Merck Research Laboratory.

EYE, EAR, NOSE AND THROAT

Edited by Marvin D. Henley, M.D.
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Neosarsphenamine in the Treatment of Nonsyphilitic Inflammations of the Uveal Tract. Hugo Lucic, M.D., Cheyenne, Wyo. *Archives of Ophthalmology*, May, 1936.

The author states that if the cause of the inflammation of the iris or ciliary body is specific then it readily responds to the specific therapy. When the etiological factor cannot be determined (Gifford in a review of acute iritis says the etiological factor can be determined in only about 78 per cent of the cases) the inflammation as a rule responds well to non-specific protein therapy, salicylates, and the local application of heat and mydriatics. Gifford, in 1887, advocated the use of sodium salicylate in sympathetic ophthalmia. It has subsequently become standard treatment not only in sympathetic ophthalmia but of acute inflammations of the uveal tract. Not only the acute but some forms of chronic iridocyclitis and uveitis do not respond well to any form of treatment and in these the prognosis is decidedly poor. It was this fact that caused the author to search for some other form of medication for those cases of unknown etiology.

Orcutt was the first to report favorable results following the administration of arsphenamine in two hopeless cases of sympathetic ophthalmia. Aruga after using this form of medication for five years agreed that the drug was a valuable ad-

junct to the other forms of treatment. Zancck, Pelzols and Ravant in France and Stokes in America are of the opinion that tuberculids and tuberculous glands respond to this form of treatment. Chronic arthritis, chorea and streptococcic septicemia are also influenced favorably by the intravenous administration of arsphenamine. Benedict and O'Leary reported twenty-four cases of uveitis in which antisyphilitic drugs were used. Those cases which were syphilitic showed the most improvement but improvement was evident in all cases. De Schweinitz and other authorities agree that arsphenamine gives a beneficial effect in all inflammations of the uveal tract. Osborn concludes that trivalent arsenicals have an affinity for structures of mesodermal origin, especially the vascular structures, hence their value in uveal tract inflammations.

After an intravenous injection of arsphenamine there is no effect apparent on the spirochetes for from five to eight hours. The organisms gradually disappear during the following twelve to twenty-four hours. The author recommends that the administration be under the supervision of a syphilologist and that it is rarely necessary to give more than four injections in a case of acute iritis. One is guided by the reaction caused and the clinical results obtained. Ten very interesting cases are reported in detail.

Clinical Record: Tip of the Nose Completely Severed and Sutured Three Hours After the Accident. J. N. Roy, Montreal, The Journal of Laryngology and Otology, July, 1935.

Experimental medicine has permitted surgery to make great strides forward in regard to severed tissues. These have been successfully grafted, even after some little time has elapsed.

This is a case report of a seven-year old child who had the tip of his nose severed by broken glass. A profuse haemorrhage occurred and after compresses were applied at home the child was removed to the hospital.

Examination disclosed a transverse loss of tissue at the tip of the nose, about five centimetres long and thirteen millimetres at the widest part, with the wound beginning at the right nasolabial fold and ending at the left fold, where the cartilage of the nostril was exposed, causing a small notch. The lip and cheek were also cut. The father was sent home to find the tip of the nose.

The patient was anaesthetized and the lip and cheek sutured. Ordinary gauze compresses were used to stop the haemorrhage. Thirty minutes later the now white tip of the nose was brought in, carefully washed in tepid normal saline, then placed in the same solution kept at 98.2 F.

Three hours after the accident the lip and cheek were repaired and the haemorrhage having ceased the wound was cleansed "and the tip of the nose, well dried, was carefully coapted and sutured with silk by means of small conjunctival needles." Since there was no loss of cutaneous substance re-establishment was made. The left nostril was dressed as was also the exterior and an especially made copper splint applied transversely to the nasal appendix, held in place by adhesive tape.

The left nostril was dressed after forty-eight hours, while the external dressing was not changed until the fifth day.

On the right side a perfect cure was obtained but there was a small depression in the nasolabial fold on the left side, which will not be difficult to repair at a later date.

The author believes that this case proves that

it is possible to replace severed tissues, after some hours, and secure fine results. He attaches great importance to the antiseptic used and the exceedingly light touch with which the compresses are applied.

Experimental Researches of the Olfactory Sense, Attempting to Interpret Its Precise Mechanism (Ricerche sperimentali intorno al senso dell'olfatto, tendenti ad interpretare il meccanismo di percezione del medesimo). Niccolini, P. (Firenze), Valsalva, 11:189-205 (April), 1935. Abstracted by Sciarretta and Published in Annals of Otology, Rhinology and Laryngology, March, 1936.

The author for the past four years has published articles on various phases of the olfactory apparatus and three more are in print.

In this paper he gives some conclusive facts of his previous work and acknowledges that, up to date, the function of the olfactory organ is not thoroughly understood.

He thinks that three factors combine in a perfect function of this apparatus.

The first is the odoriferous capacity of the various substances. He studies and discusses the olfactory properties of 210 elements and classifies them according to their ability of disseminating odors. He states that a substance to be odorless must possess a determined amount of volatility in the air and a certain solubility in the fluid which bathes the olfactory end organs. Therefore, the first requirement of the olfactory function depends on the physical (volatility and solubility) and on the chemical or chemico-physical nature of these substances.

The second depends on the composition of the nasal secretion and the chemical capacity of the mucous membrane. The author considers the ability of the nose of combining the oxygen molecule in such a form to transfer to these substances the capability of becoming perceivable by the organ of smell.

On this theory Torrigiani has demonstrated the presence of oxygenation in the nasal secretion. The author has, microscopically, shown the presence of a large number of oxygenic granules in the epithelial and glandular cells; and from these cells the granules pass into the mucous secretion which covers them. This oxidation occurs alike in the olfactory and respiratory mucosa.

He further states that sulphocyanic acid is a useful adjunct to the olfactory activity. He demonstrates first, that by stimulating the first cranial nerve (by odoriferous substance) the concentration of the sulphocyanic acid increases, and second, a stimulation of the fifth nerve causes a decrease in the quantity of this acid.

The third factor of the triad is the oxygen. The oxygen must be present, either in the atmospheric air or in the blood, because if it would be eliminated certain substances could not be perceived by the olfactory apparatus. The author has not experimented on this phase of the subject

Paget's Disease and Deafness. J. R. Lindsay, M.D., and H. B. Perlman, M.D., Chicago. Archives of Otolaryngology, May, 1936.

Otologically speaking the study of Paget's disease of bone is important because of impaired hearing in some cases and the histological picture may be likened to that of otosclerosis. Sir James Paget described this disease in 1877 and only seventy cases were recognized during the next twenty-five years. In the last two decades many cases have

been studied, especially since the extensive use of the x-ray.

Otto Mayer realized the similarity of the histologic picture of Paget's disease with that of otosclerosis and its importance was recognized through his work. In 1913 he published a report of a case, also one in 1914 and by 1917 he had reported on nine cases, in which existed impairment of hearing. Other prominent otologists have reported cases of Paget's disease which involved impaired hearing. Out of twenty-five patients with Paget's disease examined in the University of Chicago clinic, four had impaired hearing and seven showed involvement of the skull.

Four case histories are given by the author accompanied by charts showing the results of hearing tests. Loss of hearing in the high tone range and the lowered upper tone limit was noticed in all four cases. In two of the cases there was loss of bone conduction and in two cases there was loss of sound conduction. There were no symptoms referable to a disturbance of the vestibular apparatus. Clinical observation led to the conclusion that Paget's disease of the bone does not interfere with the hearing unless there is an extensive involvement of the temporal bone. These cases as well as others formerly reported show that the most common characteristic is an impairment of the inner ear.

It is always possible that osteitis deformans and otosclerosis may occur concurrently. With functional tests alone a differential diagnosis may not be possible. It is the clinical picture as a whole and the history of the case that helps in the differentiation. There is no large amount of evidence that might point to an analogy between Paget's disease and otosclerosis.

According to the author: Osteitis deformans usually occurs in late adult life, while otosclerosis rarely has its onset after middle age. Osteitis deformans is usually widespread, particularly in the cases in which deafness is present, while otosclerosis, so far as is known, is localized to the capsule of the inner ear. The familial tendency of otosclerosis is well recognized, whereas such a tendency is not a characteristic of Paget's disease. The incidence of the two diseases offers a marked contrast. The ratio of the number of cases of otosclerosis to that of Paget's disease in this clinic has been approximately ten to one. If the cases of Paget's disease without impairment of hearing are excluded, the ratio becomes sixty to one.

Culture of Human Bone Marrow

Edwin E. Osgood and Alfred N. Muscovitz, Portland, Ore. (Journal A. M. A., May 30, 1936), describe a method for the culture of human marrow in quantities permitting hematologic and metabolic studies. The apparatus supplies a lung, kidney and circulation for the marrow, as it provides for the control of oxygen and carbon dioxide tension, of pH, and of the composition of the medium; for elimination of waste products, for supply of nutrients, for removal of part or all of the culture for study, and for maintenance of sterility. The most important feature of the apparatus is a semipermeable membrane, separating the culture from the main volume of medium. This membrane allows nutrient materials from the surrounding medium to diffuse into the culture as needed and allows waste products to diffuse out as they accumulate. Because of this equilibrium, analysis of the outflowing medium gives a good indication of the conditions in the culture and of its metabolic activity. The development of a simple technic by Young and Osgood in 1935 for obtaining human sternal

marrow during life made available material suitable for culture in quantity. On the marrow culture withdrawn the authors have been doing supravital stains, hemoglobin estimations, red cell counts, total nucleated cell counts, differential cell counts, reticulocyte counts, peroxidase stains and chemical analyses. The material is suitable for any hematologic or chemical procedure. With this method it has been possible not only to observe motile, living cells, capable of phagocytosing bacteria many days after the culture was first started, but also to determine the actual number of each type of cell present, any changes in number that may occur, and the effect of any change in oxygen or carbon dioxide tension, temperature, pH or medium on the rate of mitosis and number of different cell types. It is also possible to run complete metabolic experiments. Details of the results will be reported at a later date.

Electro-Urethrotomy in Treatment of Urethral Strictures

Leander William Riba, Chicago (Journal A. M. A., June 6, 1936), has found the electro-urethrotome useful in the fibrotic, resilient and undilatable types of urethral stricture. The operation is not recommended to displace the use of urethral sounds or bougies. In large caliber strictures and urethral infiltrations, it undoubtedly has little value. In the foregoing types of strictures an electro-urethrotomy may fill a needed niche, particularly from the standpoint of the patient. For an individual who has a strictured urethra and who for some reason or other (renal colic, hematuria or injuries) needs an immediate cystoscopy, this method would seem more rational than the usual avulsion of the stricture, which is so frequently resorted to. In the author's experience, this operative technic has seemed so much simpler than that of other urethrotomies now in general use that he feels it may replace some of them to a certain extent. He does not maintain that this instrument and the technic employed are necessarily entirely correct but that the principle of using the cutting current marks a step of progress in the management of undilatable and surgical strictures. Even though the majority of his forty-nine patients were operated on in the clinic, he does not recommend this operation as an office procedure. In most instances the operation has a lower morbidity and mortality and necessitates fewer hospital days. Post-operative sounds should be passed as a routine procedure, preferably after three or four weeks. He has calibrated most patients after three weeks and passed a Van Buren sound on the fourth week. With a few exceptions, these sounds were very readily passed. There was no indication that more scar tissue was apt to form following this operation. In reality, there must be considerable absorption. In nearly every case in which the operation was properly performed, it has been possible to convert a small caliber stricture into one of large caliber with one electrosection treatment. It may be repeated a second time. Because one is dealing primarily with ambulatory patients it is best to keep the caliber of the cut closer to a 25 F. than to a 30 F. No patient objected to the treatment and all were satisfied with the results obtained. The author has no definite check on post-operative temperatures, though he is certain that some patients must have had fever reaction. Of the forty-nine cases in which operation was performed, forty-six, or ninety-four per cent, of the patients returned for at least one follow-up treatment. Only thirty returned for follow-up sounds. At the end of six months the average caliber in these thirty cases was 26.5 F.

Typhoid in the Large Cities of the United States in 1935: Twenty-Fourth Annual Report

The twenty-fourth annual report on typhoid (Journal A. M. A., June 6, 1936) deals with the same ninety-three cities that have been discussed in the corresponding articles for the years beginning with 1930. Six of the fourteen New England cities had no typhoid deaths in 1935, four of them for the second year in succession. The New England group as a whole (population 2,624,805) recorded for 1935 the lowest group rate (0.49) yet reached by that group and also the lowest rate ever recorded by any of the eight geographic divisions. This is the seventh year of progressive decline in the typhoid group rate for the New England cities. The Middle Atlantic cities have likewise had for the past four years a group rate under 1.0, thus continuing a progressive decline. One of the South Atlantic cities (Jacksonville) reports no typhoid deaths in 1935. Atlanta's rate (4.6), while higher than 1934 (3.9), is still well below the other rates of recent years and the city again, as in 1934, no longer occupies its long held position in the highest rank in the country. After the decided increase in typhoid mortality which occurred in the cities of the East North Central group in 1934, the rate has dropped back almost to the 1933 level, with fifty-eight deaths in 1935 as against eighty-eight and fifty-four in 1934 and 1933 respectively. The six East South Central cities had forty-nine typhoid deaths in 1935 as against sixty-one in both 1933 and 1934. In the West North Central cities the typhoid mortality in 1935 was considerably less than in 1934, twenty-three deaths as against forty. The West South Central cities in 1935 showed a conspicuous improvement, with the lowest group rate (3.82) they have ever attained. These cities had only seventy-four typhoid deaths in 1935 as against 105 and 106 respectively in the two preceding years. The cities in the Mountain and Pacific states had a slight increase in typhoid mortality in 1935 as compared with 1934 (thirty-five deaths as against thirty) and for the first time since 1929 the decline in the group was halted. The total of typhoid deaths for the ninety-three cities is notably less in 1935 than in 1934 (385 as against 470). For the seventy-eight cities for which complete data has been obtained since 1910 the 1935 total of typhoid deaths 348, as compared with 413 for the preceding year and the typhoid rate 0.98 as against 1.17.

Intestinal Obstruction Due to Amebiasis

Anthony Bessler, New York (Journal A. M. A., June 6, 1936), declares that no case of amebiasis should be considered cured without two criteria being present: negative stools for cysts for at least six months and roentgen examinations that show a normal colon. The latter to him is the most important because negative stools may be encountered, yet the roentgen examination shows the presence of lesions. Proctoscopic examinations may be added to these but are not to be depended on clinically. This is because the disease involves the rectum with manifest lesions in only twenty-five per cent of the instances, and even when they have disappeared cysts may be present, and the symptoms of the disease often recur. A case of intestinal obstruction with fecal vomiting is reported in which the occlusion was complete and, occurring in the left side of the colon (sigmoid), the lesion was due to pathologic changes in the sigmoid walls. The time from the infestation to complete obstruction was about twenty-two months, with three courses of antiamebic treatment in the meantime and the patient on vioform at the time of obstruction. Reed and Anderson draw attention to the importance of handling cases of amebiasis

as a prevention of possible carcinoma, especially to lesions in the sigmoid and rectosigmoid regions. This is especially interesting in connection with the case reported, because, while the strictured state that caused the obstruction was in the upper portion of the sigmoid and entirely subsided under treatment, there was a granulomatous mass also in the rectosigmoid junction, which seems to have left an effect on the caliber of the intestine yet which granulomatous mass today totally subsided and which is not interfering with normal bowel movements. On the roentgenograms taken after evacuation of the barium sulphate enema this is not noted, and normal mucosal rugae are present in this area, such not being possible if carcinoma existed.

Hypophyseothrogenic Adiposity and Emaciation

Johannes Wahlberg, Helsingfors, Finland (Journal A. M. A., June 6, 1936), reports a case that presented two syndromes: first adiposity and then emaciation. The main symptoms of the syndrome discussed are severe loss of weight and of appetite, constipation, amenorrhea, hypothermia, bradycardia, arterial hypotonia, hypometabolism and disturbances of the sugar metabolism. Less constant symptoms are epigastric discomfort and increased sedimentation rate of the red blood corpuscles (von Bergmann), falling hair (Hawkinson), reversible phlebosclerosis, and an apparent tendency to acromicria (Wahlberg). The syndrome is qualitatively almost exactly like Simmonds' pituitary cachexia but is in every detail slighter and reversible, and there are no signs of an organic lesion of the hypophysis. The theory put forward, that the syndrome may be conditioned by a functional deficiency of the anterior pituitary, is supported and at the same time it is pointed out that it seems as if the thyrotropic part of the adeno-hypophysis function plays an important part in the pathogenesis. In support of this theory it is stated that the syndrome resembles hypothyroidism in detail, except for the absence of myxedema, and that, at least in certain cases, medication with thyroid preparations, has an extraordinary effect: three of the author's four patients recovered rapidly and completely during thyroid medication. The case discussed first showed a thyrotoxicosis accompanied with adiposity, and then changed directly to the type of emaciation discussed with prompt recovery during thyroid medication. These two clinical pictures are presented as complete contrasts: probably hypophyseogenic thyrotoxicosis with adiposity and hypophyseogenic hypothyroidism with loss of weight. Very likely the first is due to hyperfunction, the latter to insufficiency of the anterior pituitary and chiefly of the thyrotropic part of its endocrine function. During one month of thyroid medication (0.1 Gm. for one week and then 0.2 Gm.) the patient gained nine Kg. in weight. She had lost as much as twenty-nine Kg. in about a year and a half.

Acute Noncalculous Cholecystitis: Study of Thirty-one Cases

During the last ten years William L. Wolfson and Robert E. Rothenberg, Brooklyn (Journal A. M. A., June 6, 1936), encountered thirty-one cases of acute noncalculous cholecystitis in which the operating surgeon stated that no stones were present. Eighteen of the thirty-one patients were males, whereas in 348 cases of acute cholecystitis presenting cholelithiasis, only eighty-three were males. The usual story in calculus cases of frequent previous attacks, indigestion, belching and

aversion for fatty foods was absent in the majority of these cases. Acute noncalculous cholecystitis is usually a severe and fulminating infection. The patients appear sicker, more frequently have chills, and maintain a higher temperature range than those with acute cholecystitis caused by cystic duct stone. The average admission temperature of the patient with acute noncalculous cholecystitis was 101.9 F., while that of the 348 patients with acute calculus gallbladder disease was 100.9 F. The cases in the series showed a high incidence of pain in the right upper quadrant of the abdomen but a low incidence of excruciating colic-like pain. Tenderness and rigidity in the right upper quadrant of the abdomen were present in all but two of the patients. Seventeen cholecystostomies and fourteen cholecystectomies were performed on the thirty-one patients. Sixteen surgical specimens consisting of fourteen gallbladders and two biopsies of the gallbladder were of the gallbladder, twelve cases, and one case each of acute hemorrhagic cholecystitis, phlegmonous cholecystitis and acute ulcerative cholecystitis. Perforation occurred in six cases, five of which were males. Perforation must be considered a likely possibility in those cases presenting a sustained temperature range higher than 102 F. for thirty-six hours or longer. The mortality in the group of cases was 9.6 per cent. All deaths occurred in male patients.

Extragenital Lesions of Lymphogranuloma Inguinale

Vernon C. David and Mark Loring, Chicago (Journal A. M. A., May 30, 1936), report four cases of inguinal lymphogranuloma (one of the mouth in a man and three of the rectum in women). They believe that the cases strongly indicate that the ulcerating lesions of the disease take their origin by contact infection and that the lymphatics are secondarily involved, as they are in any other infection. This is in keeping with their feeling that the rectal lesions of the disease are contact infections occurring in women with vaginal infection, which because of uncleanness directly contaminates the rectum, and occurring in perverted men practicing sodomy. The importance of contact infection in inguinal lymphogranuloma has not been sufficiently emphasized. Rectal strictures from inguinal lymphogranuloma develop without inguinal gland suppuration in most instances. Inguinal lymphogranuloma may cause serious ulcerating lesions in the colon or in the mouth, and it is suggested that the Frei test be more frequently used in granulomatous lesions of unknown origin. The relation of inguinal lymphogranuloma to meningo-encephalitis of unknown origin should also be suspected. Colostomy offers the best method of treatment of marked rectal stricture from inguinal lymphogranuloma; inactivity but never cure of the lesion results. Treatment of inguinal lymphogranuloma has not been satisfactorily developed, but the use of one per cent antimony and potassium tartrate or fuadin intramuscularly offers some prospect of amelioration of the disease.

Epithelioma of Skin of Bridge of Nose

Milton Friedman and Jerome Engel, New York (Journal A. M. A., May 30, 1936), treated their case of extensive basal cell epithelioma of the skin originating at the inner canthus of the eye and bridge of the nose with massive doses of low voltage roentgen rays. They followed Widmann's suggestions, which entail the administration of single weekly doses of 2,500 roentgens (measured in air) or 1,500 roentgens, depending on whether the lesion is a bulky, spherical mass or a relatively flat in-

durated ulceration, except that their unit dose is larger. The interval of one week or more between treatments allows sufficient time for response to the irradiation. Thus the subsequent treatment may be planned for a smaller lesion, permitting more careful protection of the surrounding normal tissues, from which the growth has receded. After the first three treatments have been delivered in the first two weeks, it seems wise to wait for two or three weeks before resuming further therapy in order to get the full cumulative effect of the early treatments.

A feature of this technic is that there is little tendency for the remaining tumor cells to become radiation fast. Their treatments were given in units of ten skin erythema doses, or 4,000 roentgens (measured in air). This does not accurately express the dose delivered because, with the progressive shrinkage in the size of the portal used, the slight decrease in backscattering depreciates the amount of radiation that reaches the tissues. This technic is ideally suited for noninfiltrating lesions such as basal cell epitheliomas.

Pathologic Interpretations of Roentgenologic Shadows in Pneumoconiosis

Henry C. Sweany, Chicago (Journal A. M. A., June 6, 1936), attempted a correlation of the antemortem and postmortem roentgenograms with the pathologic changes in various unclassified types of pneumoconiosis. Tuberculosis with silicosis renders a roentgenographic examination difficult or impossible in the majority of patients affected with silicosis, because of atypical characteristics or the location of the lesions. The localization resulting from tuberculosis may be predominantly that of a hematogenous tuberculosis, situated bilaterally in the upper parts of both lungs, of a bronchogenic spread bilaterally, or of a bronchogenic spread unilaterally, and even along a single bronchial ramus. The involvement of the lymph nodes is quite characteristic, forming what have been termed "eggshell" calcifications. Pneumoconiosis, resulting from a lymphatic congestion due to coal, iron and the like, differs from silicosis and silico-tuberculosis sufficiently that an involvement by such inert dust may be anticipated many times on the antemortem roentgenograms. When the inert dusts are combined in some yet undetermined proportions with a silicosis or a silicotuberculosis, it seems to result in a complex that possesses a variety of bizarre formations, some of which simulate single or multiple neoplastic masses on the roentgenograms.

Carotenemia in Diabetes

Walter Heymann, Cleveland (Journal A. M. A., June 13, 1936), states that the blood serum carotene curves obtained in ten diabetic children after the administration by mouth of carotene in oil were distinctly different from those obtained in twelve nondiabetic, healthy children and demonstrated that the metabolism of carotene is interfered with in diabetes. The carotene content of the blood, when it was once increased in the diabetic patients failed to show the normal decline and remained elevated or even kept on increasing for from ten to fourteen days after the administration of the carotene in oil had been discontinued. The analogy with the hyperglycemic reaction after sugar is given by mouth to diabetic patients is striking and speaks in favor of assuming that the utilization of carotene has been interfered with in diabetes. The diabetic carotenemia can consequently no longer be explained merely by the high carotene content of the diabetic diet.

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Bryan.....	J. T. Colwick, Durant	Jas. L. Shuler, Durant
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Coal.....		
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NOTE—Corrections and additions to the above list will be cheerfully accepted.

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ESOPHAGEAL DIVERTICULA*

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The first mention of an esophageal diverticulum which appears in the literature was made by Ludlow in 1746, when he described what we now term a pulsion diverticulum of the esophagus. Rokitansky in 1840 divided esophageal diverticula into the pulsion and traction types.

The pulsion type, the one which we are attempting to discuss, is not a true diverticulum, but rather a herniation of the mucous, and submucous coats of the esophagus through the muscular coats. Killian and Keith have demonstrated that they originate between two definite parts of the inferior constrictor muscle, i. e. between the transverse lower constrictor fibers, and the circular or oblique fibers of the constrictor inferior pharyngis muscles that go to make up the cricopharyngeus muscle. While this is a statement usually accepted, there has recently been evidence produced showing that this may be incomplete.

The traction type of diverticula are true diverticula in that the sac contains all of the coats of the esophagus. They occur almost always in the thoracic portion of the esophagus, and result from cicatricial contraction of inflamed lymph glands, which by true traction pull the walls of the esophagus outward, causing a diverticulum of varying size to develop. They usually are small, transverse in relation to the esophagus, and cause but little trouble, as the neck of the sac is rarely narrow, and because the walls contain the

muscular coats of the esophagus they tend to empty readily.

Two other types have been described, a congenital type which is related to bronchial fistula, and a lateral diverticulum described by Moynihan which arises from a gap below the borders of the cricopharyngeus and the fibers of the esophagus. These two types are very rare.

The pulsion type of diverticulum, with which we are at present particularly interested, is entirely different from the others. It is sometimes called, because of its origin, a pharyngo-esophageal diverticulum. Its site of origin is at almost a fixed point. Its progress is constant, and its anatomy and relation to surrounding structures varies but little. It occurs probably more frequently than we realize; two hundred and seventy-six cases are reported at the Mayo Clinic prior to 1933; thirty-five are reported by Lahey, and seventy-nine reported by Shallow from the Jackson Clinic. It is more frequent in men than women, about five to one. It is observed usually between fifty and seventy years of age, but may be found earlier in life. The youngest case in our series was sixty-five years and the oldest seventy-eight years.

ETIOLOGY

There have been several theories advanced as to just why these diverticula tend to develop. A history of trauma, goiter, and malignancy, or stricture of the esophagus is sometimes present. The most frequent explanation is, that in the act of swallowing considerable pressure is ex-

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erted on the wall of the esophagus, and that as a result of this a bulging of a weakened area might be started. Negative pressure is created in the act of swallowing has also been suggested as a cause. Jackson feels that it may be due to an incoordination of the muscles in the act of swallowing. C. H. Mayo suggests that an embryologic or developmental anomaly may be the basis on which pulsion diverticula develop. Judd has noted that there is frequently a dimpling in the mucosa at the point where these diverticula arise, and this may be a potential factor in their origin. Shallow thinks that penetration, of nerves or blood vessels, through the wall of the esophagus may represent a weakened area, and contribute to the cause. Since no constant factor has been found explaining the etiology, this point must remain at present somewhat speculative. Once, however, a bulging of the wall or a small sac is evident, the explanation of why it progresses is seen. Physical factors tend to increase its size; its course downward is explained on the same basis influenced by the anatomy of the area. Fascial planes lead downward from the cervical region into the mediastinum; this is due to the fact that during embryological development the mediastinal structures originate in the neck, and migrate into the chest carrying their enveloping fascia with them. There are no transverse demarcations to segregate these planes, a factor of importance when considering their surgical problems.

The sac of a pulsion diverticulum tends to pass downward between the fascial planes which envelop the esophagus; behind we have the prevertebral fascia; in front the pretracheal fascia. Because of the relation of the esophagus to the cervical vertebra the sac tends to go to the left.

SYMPTOMS

Since esophageal pulsion diverticulum is a diverticulum of gradual development, the clinical symptoms present in a given case will depend on the stage of development of the sac. Lahey has divided esophageal pulsion diverticula into three stages.

First: "At the stage when the sac is a mere bulging in the wall, the symptoms are only those of which would be associat-

ed with small particles of food being stuck in the sac. They are a sort of foreign body in the throat, and attempts to expel them by coughing and expectoration are made. One does not see at this stage, the return of any considerable amount of a previous meal, nor is there any getting up of the glary mucous which appears in the later stage."

Second: "The symptoms associated with the intermediate type of esophageal diverticulum are largely related to the accumulation of food in the sac. The sac is sufficiently large so that food passes into it and remains there, and is regurgitated from it, but it is not sufficiently large to produce obstructive symptoms. The particular symptoms therefore are related to the regurgitation of food taken at a previous meal, often mixed with the glary mucous. There are often, at this stage, noises due to the mixture of air with the contents of the sac. In addition to this, the patients are frequently able to expel the contents of such a sac by pressure over the sac, and by assuming certain postures."

Third: "The symptoms associated with the terminal stage of esophageal diverticulum are largely those of the second stage in an exaggerated degree plus those of obstruction. When the sac has reached large proportions the opening into the diverticulum is no longer on the lateral wall of the esophagus but tends to be more or less transverse, and the opening in the true esophagus tends to be more lateral. This results in all the food swallowed passing first directly into the sac. This dilates the sac, drags the sac further down into the mediastinum, and so further narrows the lateral opening into the esophagus. This produces more and more definitely obstructive symptoms until finally complete obstruction can occur, due to the narrowing of the true opening into the esophagus by traction, plus the actual pressure of the dilated mediastinal sac on the esophagus. This can result in a quite serious situation due to the diminished fluid intake with emaciation and finally real danger of starvation."

DIAGNOSIS

The diagnosis can usually be made from the clinical history. This may be confirmed by x-ray, the passage of sounds

and esophagoscopy. In differentiation, carcinoma of the esophagus, stricture with dilatation of the esophagus, and cardio-spasm must be considered.

TREATMENT

When diagnosis has been made operation should be advised, except in the very early cases, where dilatation may keep the patient quite comfortable for a time. Severely dehydrated cases should be properly prepared by the administration of fluids. Starvation should be temporarily relieved by administration of food, either by a tube successfully passed into the stomach by the esophagus, by a tube through the sac in the first stage of the operation, or by a gastrostomy. While temporizing measures may be used for a time, permanent relief can only be accomplished by operation. Most cases are suited to operation at once inasmuch as with the present operation the patient is able to take food immediately.

While there has been some discussion, as to the one, or two stage operation, most authorities feel that a two stage operation should be used. This obviates, to a large degree, the danger of a fatal mediastinitis, which condition represents the most serious danger incident to the operation. Other dangers incident to the procedure are largely those associated with the advanced age, and general poor surgical risk of the patient.

Under local anesthesia, either a cervical block, or blocking of the cervical nerves as they pass over the sternocleidomastoid muscle near its mid point, with some added infiltration as the operation proceeds, no difficulty is experienced in carrying the procedure to completion without pain. Preliminary pre-operative narcosis with scopolamine or sodium amytal quiets the patient's apprehension, and it is not unusual to have the patient fall asleep before the operation is well started. General anesthesia should not be used for two reasons; first, the danger of aspiration of the contents of the sac during its manipulation, and second, because of the dangers of damage to recurrent laryngeal nerves during the technical procedure of freeing the sac. An incision is made along the anterior border of the sternocleidomastoid muscle, the omohyoid muscle cut, the pre-

thyroid muscle broken through, the thyroid gland dislocated over the trachea after tying and cutting the middle thyroid vein, and in most cases the inferior thyroid artery. The great vessels are displaced outward, and the cellular tissues over the sac opened. The sac is by this procedure brought into view passing downward, and slightly to the left of the esophagus. Grasping the sac with blunt forceps it is usually separated from its areolar covering without difficulty up to near the neck, where some of the muscular fibers of the esophagus have become reflected on the sac; here a little tedious dissection frees it entirely. The sac must be freed on either side, and in front well up to the neck when it can be readily lifted entirely from its bed. It should then be attached to the muscle by a few sutures, at an obtuse angle without tension, and being careful not to penetrate the sac with the suture needle. The fundus of the sac can usually be brought outside the incision. In the small sacs the sac should be attached to the muscles by black silk or linen thread, to aid in finding the sac at the second stage. The ends of the threads may be left hanging outside the upper part of the wound. The wound should then be loosely closed either over or about the sac. If the sac has not been opened during the procedure no drain is needed. The trauma incident to the loosing the sac from its bed forms a transverse barrier between the fascial planes, which will prevent extension of infection into the mediastinum at the second stage if leakage should occur. Immediately after placing the sac at an obtuse angle, above the level of the entrance into the esophagus the patient is able to swallow food and liquids. The patient is out of bed the next day. In about ten days to two weeks the wound is reopened, the neck of the sac tied off with especially hardened catgut, a drain passed down below the stump, and the wound resutured. This is also done under local anesthesia. Sometimes an esophageal fistula will develop which soon closes. In our series of cases this has not occurred. The drain is removed in four to six days, and the wound is usually closed in two weeks. Sounds, using a thread which has been swallowed as a guide should be used occasionally for a year.

During the past two years we have seen seven of these cases. One of these, a very small diverticulum, was not operated, one is under consideration now and will be operated at an early date. Five have been operated and relieved entirely of the distressing condition.

A brief history of each case is as follows:

First: White male, age sixty-seven years whom I first saw in 1931. His chief complaint at this time was difficulty in swallowing. X-ray pictures showed a typical esophageal diverticulum of moderate degree. Operation was advised. He was well nourished, and as he was not having much discomfort he was unwilling to be operated. I did not see him again until March, 1934. At this time he had lost eighty pounds in weight, and was unable to swallow anything except fluids, and then only with difficulty. Most of the fluid with a lot of glary mucous was regurgitated. X-ray at this time showed a large sac extending well into the mediastinum. The sac could be felt in the left side of the neck. His general condition was negative except for starvation and dehydration. He was operated March 10th, 1934. The sac separated well up to its neck and brought outside of the wound at a higher level than the opening in the esophagus. The next day he could swallow without difficulty. On March 23, the second stage was done and the sac ligated at its base. He made an uneventful recovery, and has had no further difficulty. In three months time he had regained his former weight.

Second: White female, age seventy-three, who gave a history of having difficulty in swallowing for twelve years. This had progressively become worse, until now she regurgitated most of the food taken, with a lot of glary mucous. After eating she complained of a sense of fullness in the throat. She had lost twenty pounds in weight. X-ray pictures showed a typical esophageal diverticulum. She was a rather frail elderly woman who gave a history of having asthma for years. She had a rather marked heart murmur. First stage operation was done on May 24th, 1934. She was able to swallow the next day. Second stage was done on June 2nd, 1934. She made an uneventful recovery and soon regained her former weight.

Third: White male, age seventy-eight, who gave a history of difficulty in swallowing for the past ten years. He regurgitated most of his food with a lot of glary mucous. Was able only to swallow liquids. He had lost eighteen pounds in weight. X-ray picture showed a typical esophageal diverticulum. His general condition was good. First stage was done on January 23rd, 1935. He was able to swallow without difficulty the next day. Second stage was done February 3rd, 1935. He made an uneventful recovery.

Fourth: White male, age seventy-two, who gave a history of difficulty in swallowing for eight years. He had lost thirty-two pounds in weight. X-ray pictures showed a typical esophageal diverticulum. First stage operation was done April 10th, 1935. He was able to swallow the next day, and out of bed the third day. Second stage was done April 20th, 1935. He made an uneventful recovery.

Fifth: White male, age seventy-four, who gave a history of a sensation of there being something stuck in his throat. This had been noticed only a few months. He was well nourished and swallowed without difficulty. There was no marked regurgitation of food. X-ray picture showed a typical small esophageal diverticulum. He had a marked hypertension, with some evidence of renal insufficiency. I advised him not to be operated unless he had more marked symptoms. This was in June, 1935. After finding out what the trouble was he ceased to worry about it, and went along without trouble until January, 1936, when he died of another trouble, unrelated to the condition.

Sixth: White female, age seventy-seven, who gave a history of difficulty in swallowing and regurgitation of food for seven years. She had lost twenty-five pounds in weight. X-ray showed a typical large esophageal diverticulum. First stage operation was done October 16th, 1935. She was able to swallow without difficulty the next day and out of bed the fourth day. Second stage was done November 3rd, 1935. She made an uneventful recovery.

Seventh: White male, age sixty-five, who gave a history of having had a choking sensation in the throat, with the regurgitation of a thick mucous for the past

two years. He has not lost weight. X-ray pictures show a typical esophageal diverticulum. On January 15th, 1936, he was advised to have the condition operated. He is to return soon to have this done.

Pictures of five other cases were found in our x-ray laboratories. Two were found of the traction type.

TO SUMMARIZE

The age incidence of these cases were 67-73-78-74-77-65. Average age 72.3 years. Symptoms were present for from four months in one case, to twelve years in another. The average time symptoms were present was 4.33 years.

The symptoms conformed to the first stage in one case; to the second stage in one case, and to the third stage in five cases. Two of these cases had gone into extreme dehydration and starvation.

The five cases operated made uneventful recovery without complications, and were entirely relieved of the distressing condition.

CONCLUSIONS

1. Esophageal diverticula are probably more common than ordinarily thought.
2. Dissemination of knowledge concerning the typical symptom will result in more cases being diagnosed.
3. The two-stage operation has proved entirely satisfactory in our hands.
4. Twelve cases have been diagnosed in Oklahoma City. Seven of these have been observed by me during the past two years.
5. Pictures of both the pulsion and traction type of esophageal diverticula are presented.

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* * *

DISCUSSION

Dr. Arthur W. White: It has been my

privilege to be associated with Dr. Howard on some of the cases reported in this excellent brief on the subject of esophageal diverticula.

As was stated in the paper there are two kinds of diverticula of the esophagus. One the traction type which is produced by a pulling, by adhesions, of a portion of the esophagus and all of the neighboring tissues away from the axis of the lumen thus forming a complete pocket, usually cone shaped with a wide mouth involving all of the coats of the esophageal wall and producing a distortion or angulation of the lumen of the organ. This type may occur anywhere, but as it is most often caused by an adherence to inflamed glands the condition occurs at approximately the mid portion of the esophagus—that section most intimately associated with the mediastinal glands.

The pulsion type which is a hernia type of diverticulum occurs naturally at points of greatest weakness, i. e., the points at which the musculature is weak or does not completely surround the tube. Hence, the majority occur high up on the posterior wall of the esophagus just below the junction with the pharynx. A lesser percentage occurs at or just above a point opposite the bifurcation of the trachea just above the natural narrowing of the esophagus, which by reason of this narrowing is subjected to greater pressure by large boluses of food or by foreign bodies.

The subjective evidence is that of obstruction plus additional symptoms dependent upon the size and location of the sac. As has been stated the sac extends downward having a tendency to parallel the long axis of the organ. When sufficient size has been attained the original organ is somewhat misplaced or the lumen is sufficiently compressed to produce partial or complete obstruction, giving rise to additional symptoms of foul breath, cough from pressure on the superior laryngeal nerve, and hoarseness by pressure on the larynx, usually without pain except in severe cases. When the diverticulum is located lower down in the esophagus dull substernal pain exists or in the case of associated ulceration severe pain is present especially immediately after eating and in association with difficulty in swal-

lowing, but without the evidence of pressure on the larynx.

The appearance of the patient with a diverticulum in the pharyngeal region, from in front, is that of a goiter with greater bulging on the left side of the neck. On palpation the tumor has a softer feel and may be reduced in size by pressure, or manipulation with fingers, or the esophagus is misplaced by pressure. A bubbling sound may often be heard if the bell of the stethoscope is placed over the tumor. The patient should be examined while lying on his right side.

The x-ray is of great help in the diagnosis and should always be resorted to, not only for differential diagnosis but to assist in determining the size of the diverticulum as well as the position and degree of occlusion of the esophagus. The fluoroscope is of more help than films.

Either barium or a "Mayer" tube filled with shot may be used.

The probe and esophagoscope should be used with the greatest care and the last procedure to be considered. It is quite dangerous to attempt to pass any type of sound except with a thread as a guide.

In small diverticula or in an inoperable case the diverticulum may be washed out with a small blunt tube but in this also great gentleness is to be urged for fear of rupture.

In diverticula too low in the chest to be removed from the wall, in case of much pressure, between the esophagus and diverticulum may be severed converting the diverticulum into a dilatation of the esophagus.

Dr. Howard is to be complimented on his high percentage of satisfactory results, as this is one of the most difficult and disappointing procedures in surgery.

Medical Aspects of the Gall Bladder Problem*

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Few organ systems of the human body give rise to such a great bulk of the day to day cases of the internist and general practitioner as the extra-hepatic biliary system. To discuss all phases of such a subject would and has indeed filled many learned tomes. It is my purpose rather to confine myself to a small and restricted portion of this vast field and to discuss those disturbances which I feel sure account for innumerable instances of the well known and much discussed "non-functioning gall bladder." I refer to those functional disturbances of the gall bladder variously termed biliary dyskinesia of Westphal, the physiologic block of Smithies,⁶ or the spastic and atonic distension of Newman.⁵ These types of dysfunction are dependent upon neuromuscular imbalance or antagonism of the wall

of the gall bladder, the sphincter of Lutkens, the sphincter of Oddi and the papilla of Vater as well as the muscular coat of the duodenal wall.

The anatomy of the extra-hepatic biliary system is simple. The gall bladder itself, with a muscular wall (albeit poorly developed), has at the opening of the cystic duct an imperfect and somewhat disputed sphincter, the sphincter of Lutkens. The cystic duct, with its connection with the hepatic duct and the choledochus may be regarded functionally as simple conduits. The pancreatic duct of Wirsung may or may not join the choledochus before the latter penetrates the wall of the pars descendens of the duodenum and empties through the papilla of Vater. The insertion into the duodenal wall is an oblique one and the intramural portion lies in the grasp of the circular muscle fibers of the duodenum. The sphincter of Oddi

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is composed of an aggregation of these fibers at the papilla forming a weak sphincter.

The nerve supply to the gall bladder comprises the splanchnic nerves as well as the vagus. According to Howell,² the splanchnic nerves supply both the motor and the inhibitory fibers but motor fibers are also supplied by the vagus. Sensory fibers are found in both vagi and splanchnics. Stimulation of the proximal end of the cut vagus causes contraction of the gall bladder wall with accompanying relaxation of the sphincter of Oddi, this being the normal mechanics during digestion and emptying of the gall bladder. Stimulation of the proximal cut end of the splanchnic causes reflex stimulation of the inhibitory fibers to the gall bladder wall and hence dilatation of the organ. In accord with these facts Westphal (quoted by Held¹) found that moderate stimulation of the distal end of the splanchnic caused "normal" evacuation of the gall bladder with inhibition of the sphincter of Oddi. More intense stimulation caused not only marked contractions of the gall bladder but spasm of the sphincter of Oddi as well, thus causing failure of emptying. (The hypertonic dyskinesia.) Stimulation of the proximal end of the splanchnic caused inhibition of contraction of the gall bladder with spasm of the sphincter of Oddi, . . . the atonic dyskinesia. It is to be noted that in both instances the ultimate reason for failure to empty lies in the sphincter.

The work of Ivy³ and his collaborators has clearly indicated the salient nature of the hormonal control of gall bladder evacuation. Whether cholecystokinin, secretin, or some lipoidal substance be responsible for this action, it is convincing to most students of the problem that whatever the intrinsic nervous mechanism may be, the humoral "trigger" sets the process in motion. That excessive production of the humoral stimulus may result in unruly action of the gall bladder is shown by Ivy and Sandblom.⁴ A duodenal tube was passed in normal human subjects and several control samples were collected. Intravenous injection of cholecystokinin resulted in a flow of first, bile and then, pancreatic secretion. From this procedure

no distress was elicited. However, the injection of a second dose of cholecystokinin caused a free flow of pancreatic fluid without bile and the subject began to complain of typical biliary colic. Relief was required fifty minutes later by injection of $MgSO_4$ via the tube. This phenomenon was noted in three of nineteen subjects tested. Hypertonic dyskinesia is nearly always found in the asthenic type of person who, after full meals, complains of diffuse upper abdominal discomfort. Attacks of colic are infrequent in either type. The patient with hypertonic dyskinesia can be relieved by duodenal drainage though larger amounts of $MgSO_4$ than normal may be required. The cholecystogram in either phase of dyskinesia is either absent or extremely faintly outlined. Neither type is uniformly associated with icterus even of a minimal nature.

Asthenic patients whose appetite is capricious and who have fullness in the right upper quadrant much of the time despite meticulous attention to the diet are most likely to fall into the category of atonic dyskinesia. Here of course duodenal drainage alone does not return bile because of failure of contraction of the gall bladder though small amounts are usually obtained probably because of the collateral factors favoring gall bladder evacuation, abdominal pressure changes duodenal peristalsis, etc.

I wish to state my indebtedness to Dr. I. W. Held,¹ of New York, for his stimulating article on this subject and which did much to disseminate general knowledge of the subject. It was following the reading of this article that I was prompted to review my records with this disturbance of gall bladder function in mind. In a somewhat limited series, I was able to find three satisfactory cases corresponding to the hypertonic type.

The significance of this situation is clear when one considers the following sequelae: (1) The possibility of operation upon cases of dyskinesia with disappointing results; (2) the possibility of biliary stasis leading to calculus formation and true organic disease of the gall bladder. In the first eventuality I am sure that internists, as well as their surgical confreres

can all recall certain unsatisfactory cases of operation in instances of biliary colic, probably after a cholecystographic report of "non-functioning" gall bladder and the most embarrassing persistence of symptoms due to the recurring spasm of the sphincter of Oddi.

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Combined Non-Specific Ulcerative Colitis and Ileitis*

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Recently there has appeared in the literature, several cases of a combined non-specific granulomata involving both colon and ileum.

It was thought, when terminal ileitis was first described, that the lesion did not run past the ileo cecal valve, but since that time there has appeared evidence that it may spread past the valve to involve the cecum, sigmoid or any part of the colon.

The cause of ulcerative colitis and ileitis is unknown. Bargan of the Mayo's isolated from the crater of the ulcers, a gram-negative diplo-streptococcus, which he thought to be specific. Since the beginning of this century, one school of physicians has felt that the process is a phase of bacillary dysentery, and even recently Joseph Felson has brought forth proof that either of the types of *B. dysenteriae* may be found on agglutination titers. There are others who believe in the trophic, metabolic and allergic origin.

Generally the symptoms displayed by the patient are:

1. Pain.
2. Diarrhea.
3. Loss of weight.
4. Nervous phenomena.
5. General malaise.
6. Nausea and vomiting.

As a rule, the patient complains of pain, cramp-like in character, coming and going

with peristalsis. It may be situated over the entire abdomen or only over certain areas. He may have complained of this pain for months or years, only slightly noticeable at first but gradually becoming so severe as to require narcotics. There may be intervals of months duration of complete freedom, only to have an exacerbation. This pain may be relieved by the passage of flatus, if there is much meteorism, or by a bowel movement. Distention is often troublesome and is worse after slight exercise. Relief is obtained by rest in bed. Ileal involvement usually causes pain in the right lower quadrant. Ulcerations of the transverse colon ordinarily cause severe pain, palpitation, sweats, prostration and weakness. Ulcerations in the sigmoid and rectum are more liable to cause tenesmus at stool.

The diarrhea usually varies as to the location of the lesion. Ulcerations in the ileum and cecum cause from two to four bowel movements a day. If the process involves the left bowel, sigmoid and rectum, then one may see as high as fifteen to twenty movements of bloody, purulent mucous a day. In acute recto-sigmoiditis, the constituents of blood, pus and mucous are not thoroughly mixed with the food. In the hemorrhagic form of colitis great quantities of blood may be passed until the patient is exsanguinated. He may have from ten to twenty bowel movements a day and still have an obstipation. He passes only blood and mucous. In ilio-cecal involvement, pus and blood are usually

*Read before the Staff of the Oklahoma City General Hospital, April 24, 1936.

present in small quantities. However, in some cases of less fulminating types it may be impossible to detect pus even with a microscope.

Loss of weight varies also with the location of the ulceration. Right sided involvement may cause a loss of weight of possibly ten to fifteen pounds. In left sided involvement with the exhausting diarrhea, the weight may go down rapidly until the patient is emaciated. The weight loss coincides directly with the fulminating attacks.

Fever, with ileal involvement, is of low grade, septic in type with periods of months remissions. Sigmoiditis and transverse colitis may run a high temperature of 103 to 104.

Nervous phenomena such as inability to sleep, hyperaesthesias, hot flashes, etc., vary in degree but are nearly always present.

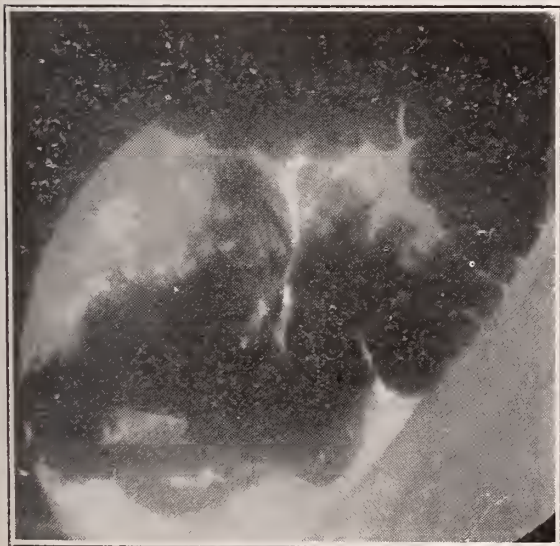
Vomiting is usually not severe even when there are signs of progressing intestinal obstruction.

Examination ordinarily shows a slightly stooped patient who has lost some weight. In chronic ileitis, a mass may be made out in the right lower quadrant. With colon involvement, there is tenderness along its entire course. The sigmoid is usually spastic and easily felt. Rectal examination with the finger gives considerable infor-

mation, especially in rectal involvement. The rectal sphincter is contracted and spastic and there may be considerable pain on introducing the finger through the contracted area. One may feel a slightly granular sensation on palpation of the rectal mucosa.

Sigmoidoscopic examination is imperative in every case. In acute cases one may see only an edematous reddened mucosa. Shallow ulcers often punctate, may be present and often confluent. In the chronic stage the shallow ulcers have irregular borders, and the mucosa has a bluish tint. Nodular hyperplastic types give the appearance of granulation tissue separated by fibrous bands and polypoid islands may be seen. During the healing stage, the nodules become fewer and the intestinal folds more visible.

X-ray examination of an opaque meal by mouth and also of a contrast enema give valuable information. Plates taken three, six and eight hours after barium by mouth will disclose the loops and coils of ilium. If ulceration is present in this portion, the typical Kantor "string sign" will be present. The bowel appears as a stiff tube with all markings gone. Upon evacuation of the barium, a contrast enema should be given after the patient has been properly prepared. In the catarrhal stage, the longitudinal folds disappear and the transverse folds become more prominent. During the ulcerative stage, the bowel appears as a rigid hose, the haustrations are absent and the bowel is narrowed and shortened. However, at times the shadow has a feathery appearance. When only one or two ulcers are situated in the bowel, one may not be able to demonstrate the lesion by the usual technique of barium enema. It then becomes necessary to fill the bowel with a thin solution of barium or other opaque substances, let the patient expel same, and then inflate air into the colon under the fluoroscope. This method gives a beautiful mucosal pattern and ulcers which are indistinguishable otherwise, are brought out with greater intensity. Pressure against the abdominal wall thins out the barium mixture and brings into prominence the mucosal folds and leaves the crater of the ulcer filled with barium.



The lowest loop of ileum demonstrates narrowing and stiffness typical of the "string sign."

In the differential diagnosis one should consider:

1. Appendicitis.
2. Ruptured viscus.
3. Ameobic dysentery.
4. Cancer of the pancreas.
5. Acute pancreatitis.
6. Cancer of the colon.
7. Pellagra.

Other diseases which should be differentiated are: giardia flagellate diarrhea, hyperthyroidism with diarrhea, achylia gastrica, tuberculosis of the bowel, acute bacillary dysentery and typhoid fever.

Ileitis, in its fulminating attack, may simulate appendicitis, and can only be differentiated at operation. Appendicitis may at times cause a diarrhea, and in these types it is exceedingly difficult.

A ruptured viscus may simulate an attack of fulminating transverse ulcerative colitis. Severe ulcerations in the transverse colon may cause a rapid running pulse, extreme distention of the abdomen, cyanosis, profuse perspiration and shock. Blood in the bowel movements and sigmoidoscopic examination and x-ray will usually clear up the diagnosis.

The search for amoeba either in the encysted or motile forms, is imperative in every case of ulcerative colitis. This can best be done by taking a specimen from the crater of the ulcers through the sigmoidoscope.

Cancer of the pancreas may cause diarrhea, but usually there is no blood in the stools and a microscopical stool analysis shows undigested oil and meat fibers.

Acute pancreatitis simulates at times severe ulcerations of the transverse colon. The board-like rigidity of acute pancreatitis, pain referred to the back and the negative stool findings serve sufficiently in the differentiation.

Cancer of the colon may cause diarrhea with blood and pus and it is only through x-ray that the diagnosis is possible.

Complications of ulcerative colitis are sometimes many. I shall discuss only two, namely, carcinoma and pyoderma gangrenosa. Probably through irritation, carcinoma is a frequent complication during

a chronic course of ulcerative colitis, affecting chiefly, sigmoid, hepatic flexure, splenic flexure in the order named.

Pyoderma gangrenosa is a skin lesion characterized by crater-like ulcers, situated on any portion of the body, which spread peripherally with an indurated erythematous border. This advancing border is followed by a bullous eruption, in turn becoming necrotic and purulent. It does not invade muscle tissue. The cause of this complication is said to be due to the streptococcus hemolyticus and staphylococcus living in symbiosis.

The prognosis of severe ulcerative colitis and ileitis combined is bad. Ambulant types give a better outlook but have tendencies to relapse. There are intervals in which the patient appears to be completely recovered but acute exacerbations are the rule.

Treatment of light forms of proctitis and sigmoiditis consists of local applications through the sigmoidoscope, soft diet, high vitamins and rest. Fulminating attacks are treated with Barger's diplo-streptococci serum, anti-dysentery serum, typhoid vaccine intravenously, soft nourishing high vitamin diets, belladonna and opium for relief of pain, injection of oxygen per rectum and enemas of antiseptic solutions.

In severe chronic forms, appendicostomy may be done with continuous irrigations of the colon. In combined ilio-colitis with stenosis, the choice of operation is resection of the diseased bowel. Colostomy should become a life saving measure and should never be done except in this emergency. Patients with chronic ulcerative colitis with colostomy almost never recover. When such an operation has been performed and all hope of recovery gone colectomy is probably the operation of choice.

I wish to present a case of combined ilio-colitis. A brief summary of his symptoms is as follows:

Generalized abdominal cramps for six months, starting with an attack of influenza. He had two to three soup-like bowel movements a day. The pain was cramp-like in character and situated over the right lower quadrant of the abdomen. He did, however, have slight tenesmus at

stool. Examination disclosed a slightly stooped thin male about thirty-five years of age. The examination was essentially negative save for fever of 101, right sided abdominal rigidity and tenderness. No amoebae were found in the stools but fecal analysis disclosed occult blood.

The exact diagnosis, however, was made upon x-ray examination of the coils of the terminal ilium which displayed the typical Kantor "string sign."

He came to operation and eighteen inches of ilium, three inches of cecum together with three inches of sigmoid were removed. An ilio-ascending colon anastomosis was done on the right side. A Mikulicz operation was done on the left, bringing both ends of the sigmoid to the abdominal wall making a temporary colostomy.

Ten days later the Mikulicz clamp was placed in the colostomy wound and removed in about three days. A second operation was done in a month closing the colostomy.

The patient went back to work in two months at hard manual labor and has been able to carry on his duties satisfactorily. He has from two to four bowel movements a day, has gained back his normal weight and is in apparently good health.

SUMMARY

A case of the combined type of non-specific ulcerative colitis and ileitis is reported originating in the State of Oklahoma. The symptoms of ulcerative colitis or ileitis vary as to the location of the lesion.

Epidemic Cerebrospinal Meningitis

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During the first few months of 1936 we observed several cases of epidemic cerebrospinal meningitis at the State Training School at Pauls Valley and wish to report our findings with the hope that they may be of help to our colleagues. To simplify the discussion, we have prepared the accompanying table of summary of the cases.

EPIDEMIOLOGY

It was interesting to note that no case of meningitis developed from exposure to another case. Boys exposed in the dormitories by vomitus, coughed droplets, etc., and attendants in the hospital during the period of acute illness never developed symptoms. Gracious and greatly appreciated efforts were made by Dr. Beyer and Dr. Pearce of the State Health Department to isolate carriers, but due to the difficulty of culture control and the inability to culture all the boys at one time, we finally exercised only the ordinary precautions of exposure and found no increase in the spread of the disease.

The presenting symptoms in these cases

were striking both for the profound illness of the patients from the onset and the absence of characteristic meningeal signs. The third case was our only true picture of meningitis, only because he was a son of one of the guards and the family would not consent to treatment early.

Headache was complained of in all but three cases, one mild infection and two boys in coma before they were reported sick. The wide variation in pulse and temperature seemed fairly constant in all cases and most of the boys had temperature elevations less than one would expect for their profound illness.

Positive Kernig sign was present in only Number 3—the only late case in the group, but we found resistance to active nodding in all cases except Number 12, who was unresponsive when first examined. We would have the boys try to put their chins on their chests and invariably they would bring the chin down in short irregular jerks which we called a Kernig sign positive to active motion. Skin rash in the

form of purpuric macules over the trunk and extremities was present in seven of the cases. The three patients with the most severe skin involvement ran protracted courses with prolonged active toxemia. One of these boys died five weeks after he had apparently recovered and was helping around the hospital; another complicated

by panophthalmia and ending in blindness in one eye and partial blindness in the other eye, the third developed panophthalmia and secondary skin abscesses at sites of the purpura but eventually recovered after a second series of specific treatment after the seventh day of the disease.

With exception of one mild case, the

SUMMARY CHART

Number	Date Onset	Prominent Symptoms at Onset	Course	Spinal Fluid	Rash	Treatment	Result
1	Jan. 3, 1936	Temp. 100, pulse 130. Headache severe. No meningeal findings.	Rapid with death 12 hours	Cloudy increase pressure	0	Antitoxin 1 Serum 1 Drainage 1 Glucose 2	Death 12 hours
2	Jan. 4, 1936	Temp. 99, pulse 120, sore throat and headache.	Rapid	Clear to cloudy pressure +	0	Antitoxin 3 Serum 5 Drainage 3 Glucose 2	Recovery
3	Jan. 5, 1936	Temp. 102, pulse 140. Kernig and convulsions.	Rapid	Purulent great pressure	+	Glucose 3 Antitoxin 2 Serum 6 Drainage 4	Recovery deafness
4	Jan. 6, 1936	Temp. 102, pulse 138. Headache.	Rapid slow improvement	Purulent 14 days	+	Glucose 6 Serum 7 Antitoxin 5 Drainage 10	Recovery from acute stage. Death February 28 br. abscess
5	Jan. 8, 1936	Temp. 99, pulse 120. No complaints.	Moderate	Clear first day, then cloudy	0	Antitoxin 1 Serum 4 Glucose 0	Recovery
6	Jan. 11, 1936	Temp. 100, pulse 140. Headache.	Rapid Toxemia continued	Clear, much pressure	+	Antitoxin 5 Serum 6 Glucose 4	Recovery with partial loss vision from eye infection
7	Jan. 26, 1936	Temp. 99, pulse 110. Slight headache.	Rapid death 7 hours	Clear with moderate increase pressure	+	Antitoxin 2 Serum 1 Glucose 2	Death 7 hours
8	Feb. 2, 1936	Temp. 100, pulse 130. Headache.	Rapid	Clear with great increase pressure	+	Antitoxin 2 Serum 8 Drainage 3 Glucose 3	Recovery
9	Feb. 7, 1936	Temp. 102, pulse 138. Headache	Moderate	Clear with great increase pressure	0	Serum 4 Antitoxin 2 Glucose 2	Recovery
10	Feb. 23, 1936	Temp. 100, pulse 128. Onset with chill, low backache.	Rapid	Clear with great increase pressure	+	Antitoxin 3 Serum 7 Glucose 3 Drainage 3	Recovery
11	Mar. 2, 1936	Temp. 100, pulse 140. Headache.	Rapid	Clear with great press. increase	0	Serum 2 Antitoxin 4 Glucose 1	Recovery
12	May 3, 1936	Coma. Temp. 103, pulse 160 (?).	Rapid no change mental condition 6 days	First clear pressure normal, 3 hours later cloudy increase pressure	+	Serum 9 Antitoxin 7 Drainage 6 Glucose 5	Recovery slight visual loss right eye from panophthal.

course was very rapid with profound toxemia lasting from seven hours in one fatal case to six days in the last case. The two early fatal cases died of respiratory paralysis regardless of specific or supportive measures and evidently during the height of the bacteremia. Every one of the patients showed signs of collapse during the first twelve hours—either cyanosis alone or with decidedly irregular respirations.

The spinal fluid in ten cases was under increased pressure and either clear or slightly cloudy at the first puncture. In Number 4 the fluid remained thick and purulent for fourteen successive days and he developed a late secondary abscess and died. Every case was proven to be of meningococcic origin.

There were two deaths in the acute stage of the disease, a mortality of 16.6 per cent. One death from late abscess brought the final mortality to twenty-five per cent.

The routine of treatment developed during the epidemic was the following:

1. Diagnostic puncture, replacing fluid with antiserum.
2. Intravenous glucose, 50 cc. of fifty per cent.
3. Two hours later ten to twenty thousand units antitoxin intravenously, and ten thousand units intramuscularly.
4. Observation for next few hours. Stimulants, glucose or repeated spinal puncture used if general condition of the patient demanded other than watchful waiting.
5. Temporary dehydration after first twelve hours.
6. Specific treatment intraspinally repeated from six to twelve hours after first puncture and antitoxin continued intravenously and intramuscularly until all signs of acute bacteremic stage of the disease had passed.
7. Spinal drainages continued even after fluid normal in pressure if the patient had any elevation of temperature or suspicion of latent infection.

In the first case of panophthalmia, since it developed relatively late in the course, we used only local measures in treating

the eyes. After development of the second case, Dr. Greening heard this particular complication discussed in the Kansas City meeting and suggested further specific treatment because of the possibility of continuation of active blood stream infection. Remarkably, the eyes cleared in forty-eight hours after antitoxin was begun.

CONCLUSIONS

1. Cases of epidemic cerebrospinal meningitis in the last epidemic presented few classical symptoms or findings at the onset.
2. A practical way to demonstrate a mild Kernig sign is described.
3. The early and liberal use of antitoxin is efficacious in combatting the bacteremic stage of the disease, and possibly of great value in the treatment of late complications such as ophthalmic infection as described.

Compression of Cauda Equina by Ligamentum Flavum

Walter D. Abbott, Des Moines, Iowa (Journal A. M. A., June 20, 1936), cites a case of compression of the cauda equina by the ligamentum flavum in which there was persistence of root pain with a paucity of demonstrable objective changes. In the event of progression of symptoms, spinal manometric readings and injections of lipolodine are justified to determine the existence of an underlying pathologic process which may be removed before severe damage to the nerve roots has taken place. The case illustrates the role of antecedent trauma in which the ligamentum flavum was torn and, in the reparative process, scar tissue had caused a compression of the cord. One month after laminectomy was performed the patient stated that she was driving a car, walking one or two miles daily, had attended a dance without recurrence of pain, and to all appearances had recovered completely.

Antivenin

Concurrent with the reports of more than six hundred persons being bitten by the "Black Widow Spider" with a mortality of forty, comes the announcement that E. R. Squibb & Sons are now supplying Antivenin (Anti-Black Widow Spider Serum). Widespread professional interest has been shown in methods of treating these bites, especially with the steady increase in the number of cases reported from southern, southwestern and western sections of the United States.

Antivenin is prepared by the hyperimmunization of sheep with repeated doses of venom from the black widow spider. The serum is standardized by determining its neutralizing effect when mixtures of it with venom are injected into young rats. Clinical reports upon this important product as well as information as to dosage and administration are contained in literature supplied by S. R. Squibb & Sons upon request.

Antivenin is available in ampuls of sufficient content to permit the withdrawal and administration of ten cc. of the serum.

Care of the Premature Infant*

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Etiology: The causes of prematurity are many and varied, and may be roughly divided into two classes:

1. Those conditions which might cause a premature expulsion of a normal baby. Under this might be classed injuries, heavy lifting, physical exhaustion, emotional upsets, accidental or intentional rupture of membranes, and surgical procedures not directed to the uterus itself.

2. Those conditions which react upon the fetus itself. Under this, falls the infections, either acute or chronic, or some condition, which through its debilitating effect on the mother, directly affects the nutrition and development of the fetus. According to many observers, syphilis is responsible for fully one-fourth the cases of prematurity. Chronic nephritis is a common cause of spontaneous premature expulsion of the fetus, and these premature babies of a chronic nephritic are usually weak babies, and the prognosis in these cases is always more grave. During the epidemic of influenza in 1918, there was a marked increase in premature births. Multiple pregnancies result quite often in premature birth, Hess stating that seventy per cent of twin pregnancies terminate prematurely. In quite a large percentage of premature births no cause can be determined.

In the handling and care of the premature baby, our first consideration should be the realization that we are dealing with an individual, all of whose bodily functions are under-developed. There is a poorly developed musculature; the osseous development is immature—the respiratory system shows an under-development almost characteristic. This is due to the poor development of the respiratory muscles, and to the depressed and under-developed respiratory centers. Partial atelectasis is rather the rule in the premature. Imper-

fect oxygenation due to the weakened respiratory muscles and centers, and to the atelectasis, cause frequent cyanotic attacks. These are brought on by taking food, vomiting, or without apparent cause. There is a more rapid depletion of the hemoglobin following birth in the premature than in the full term baby, though this might be one hundred or more at birth.

One of the most prominent and consistent characteristics of prematurity, is the inability to maintain a regularity of the body temperature. There is a marked tendency to subnormal temperatures, due to the small amount of subcutaneous fat, and the relatively large radiating surface. There is also a tendency to assume the temperature of the surrounding air, and hyperthermia may be easily produced by external application of heat.

The premature is more susceptible to infections and a slight trauma may produce a condition of serious consequence.

This brief outline of conditions existing in the premature, leads us to our careful considerations in the immediate and later care of them. The prognosis of the ultimate outcome is one of difficulty though may be influenced by the following:

1. The age in utero. The favorable outcome is directly in proportion to the age in utero. The small baby born at the eighth month certainly gives a more favorable prognosis than the larger one at seven months.
2. The size, plus the information obtained as to intra-uterine age may influence the prognosis, a more favorable prognosis determined directly by the weight.
3. Body temperature and its ease of maintenance is of prognostic value, those babies whose temperature remains within one or two degrees of normal, having a fair chance to live.

*Read before the Obstetric and Pediatric Section, Annual Meeting, Oklahoma State Medical Association, Enid, April 7, 1936.

The chances decrease with the lowering of the temperature.

4. The general appearance of the baby is a reliable source of prognosis. The infant showing fair muscle development, skin elasticity, and a lusty cry, with fairly well developed suckling ability, certainly offers more hope than otherwise.

MANAGEMENT AND CARE

The prevention of prematurity is one of the obstetrician's problems, and it is not the purpose of this paper to go into that. At best the percentage will not be low enough. There are a few thoughts that should be in the minds of the obstetrician, when he knows that he is dealing with a baby about to be borne prematurely. Extreme gentleness to reduce trauma, preparations to avoid chilling and strict asepsis.

The immediate care of the premature from a pediatric standpoint resolves itself into three main considerations. First, maintenance of body heat; second, asepsis; and third, feeding. Nursing care may be added, as certainly no condition requires the careful and expert handling of a competent nurse more than the premature infant.

MAINTENANCE OF BODY HEAT

No detail in the management of the premature is as important as this. Loss of body heat should be minimized both at delivery and afterward. Warm sterile blankets, or cotton pads, should be immediately available and the baby delivered into this, while the later step of delivery, i. e., cutting the cord, is done, and this done as quickly as possible. Bathing and oil baths should be dispensed with for the first few hours until the body temperature, which has been lowered during delivery, is brought up. A pre-heated crib should be in readiness, and the baby left absolutely quiet and undisturbed. This brings up the question of the best type of heated crib, or incubator to be used. I have found that the improvised incubator to be as efficient as those sold commercially. Primarily, they should provide sufficient external heat to keep the infant's temperature constantly within normal range. A well padded basket and heated by hot water bags or electric bulbs, with a

half of the opening of the basket covered with a blanket, makes an acceptable improvised incubator. A thermometer should be suspended beneath the covering and the temperature maintained at a sufficient level to bring about a normal temperature in the infant. I know of no arbitrary figure at which to set this—it may vary with the size and condition of the infant. Ordinarily ninety degrees or above is needed. Over-heating, provided proper humidity is maintained, is not often injurious. Once the infant is placed in this crib, whether it be the improvised or commercial incubator, handling should be reduced to the absolute minimum, only being disturbed for those things which are absolute essentials. This will minimize temperature fluctuations, and there will be less vomiting. The length of time the baby should be kept under these conditions will depend entirely on the progress, the temperature being reduced as the development of the baby shows that it is able to maintain its own body temperature.

ASEPSIS

As has been pointed out, the premature is much more susceptible to infections than the mature infant, and the strictest aseptic precautions should be taken. The hands of the attendant should be aseptically washed, masks should be worn, gowns should cover the ordinary clothes, and above all, visitors should be prohibited from the room or nursery.

FEEDING

The feeding of the premature infant presents a problem that is a perplexing one, and one which might present many difficulties. Not alone in the selection and adaptation of a suitable food, do many problems arise that might cause concern as to the ultimate outcome, but also to arrive at a manner in which the food might be given, so as to put the least physical strain on a constitution which at best, is at a low ebb. While practically all the digestive ferments are present in nearly normal amounts in the alimentary tract of the premature infant, the intestinal tract is more inert. The aim of the physician then resolves itself into the following factors: to prevent as nearly as possible a loss of weight; to prevent vomiting, and to provide a suitable food in such amounts

and intervals as to bring about a gain in weight without gastro-intestinal disturbances. Whereas in the normal full term baby weighing six to seven pounds, an initial loss of several ounces is of no great concern, yet the same loss in the premature presents a percentage loss, which assumes grave proportions. To prevent the initial loss of weight, fluids should be given early, preferably four to six hours after birth. I can not see the advisability of waiting twelve to eighteen hours before administering fluids.

The manner of giving the foods is one of extreme importance. Bearing in mind the generally weakened condition of the premature, it should be our idea to conserve energy in every manner possible. Considerable energy is expended in suckling, especially since all the muscles which might be brought into play, are poorly developed. I have found that tube feeding, by means of a catheter, either through the nose or mouth, has resulted in such good, that I, personally, feed all premature babies in this manner, during the first few days. The length of time that this should be continued, will depend entirely on the progress of the infant. With a competent, careful nurse this might be kept up for quite a while, with no apparent ill effect on the baby. The attendant, or nurse, administering food in this manner, must necessarily be experienced and one whose judgment is sound. Care must be exercised to prevent trauma, using first one nostril and then the other in the event that nasal gavage is used, and then at other times putting the tube through the mouth. The distance which the tube is to be inserted should be measured, and marked indelibly on the catheter. This distance is obtained by placing the distal end of the catheter at the tip of the ensiform cartilage and measuring to the tip of the nose, this measurement to be used in nasal feedings. A second measurement, the same except for marking the tube at the level of the lower lip, to be used for gavage through the mouth. In this way, the possibility of getting the tube too far into the stomach, thereby traumatizing the delicate stomach membrane, is avoided.

As the baby progresses, the manner of feeding may be stepped up, as it were, with an idea of developing the suckling

muscles. Following the tube feedings, the ordinary medicine dropper may be used, watching closely the baby's attempt to suckle. When this occurs, the Breck feeder, being a hollow tube fitted at one end with a bulb, and a nipple at the other, is used. Pressure may be made sufficient to force the fluid through the nipple. After a few days of this, we find that the infant can be on its own, and taking food satisfactorily from the bottle. If in the change from one step to another, vomiting should occur, and should persist for a few feedings, then it is best to go back to the method previously used. While I have no statistics available, I am quite positively convinced, since making this a routine matter in the manner of feeding these premature babies, that our digestive disturbances have been less, gains in weight have been more consistent, and in general there has been a more rapid progress past those first few trying days in the lives of these prematurely borne babies.

FEEDING INTERVALS

I do not believe it possible to arbitrarily set down the intervals at which the premature baby should be fed. This will depend largely on the judgment of the attendant. Ordinarily the short feeding intervals—one or two hours—is not desirable. It entails too much handling and too frequent disturbance of the delicate mucous membranes. There are very few prematures which do not progress more satisfactorily on the four hour interval, up to such a time as bottle feedings are instituted and then at three hour intervals.

The food requirements of the small baby are much higher per pound body weight than the larger mature baby. Whereas a full term baby may gain on sixty to seventy calories per pound body weight, frequently the premature will not gain until calories are supplied totalling seventy-five to eighty. The amount to be given will depend on the size, kind of food given, the intervals between feeding, and above all, it will be governed by close observation.

FOOD

In the selection of food for the premature there can be but one answer to the question—all others are but at best, poor substitutes. The one food so highly desirable that it behooves the attending physi-

cian to go to any amount of trouble to obtain it, is breast milk. In the case of institutionally delivered babies, this can usually be done. It is quite often possible to obtain breast milk from some mother successfully nursing her own baby. This may be done, considering the small amount needed for the premature, and the fact that careful emptying of the breasts, either by manual expression or breast pump, promotes a more generous milk supply. The electric breast pump, in the hands of a careful operator, has proven most efficient. Diligent search for suitable breast milk should be instituted at the birth of the premature. It should be borne in mind that the probabilities of the mother nursing the premature baby are greatly against it, the very condition causing the prematurity, affecting, to a great degree, the liklihood of her being able to nurse the baby.

Should breast milk not be obtainable, then of course artificial feeding must be our last resort. The matter of selection then resolves itself into that food with which the attendant is most familiar. There are on the market, numbers of proprietary foods, all of which have proven valuable in the hands of different pediatricians. The ordinary milk, water and sugar mixtures have been used successfully; acidulated milk has been advocated by others; and the various dried milk mixtures have, likewise, produced good results.

Hence, I am convinced that best results are obtained by the use of that preparation with which the pediatrician or physician is most familiar.

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Nervous and Mental Problems in Obstetrics*

JULIAN FEILD, M.D.

ENID

Nervous and mental problems in obstetrics are many and varied. In literature there are so many theories and ideas that it becomes a matter of personal opinion and individual experience.

The uterus and the reproductive organs have a very rich nerve supply coming from both the sympathetic and cerebrospinal systems. The motor fibers are derived from the sympathetic, arising from the aortic plexus with fibers from the renal and genital plexuses, forming a ganglion just above the promontory of the sacrum near the bifurcation of the aorta. The nerves pass on either side of the rectum to the uterus to form the great cervical ganglion. The cerebrospinal nerve fibers come from the pneumogastric, phrenic, and splanchnic nerves and follow the same course with the sympathetic.

Their function is not definitely known, but it is evident that there is a very close nerve connection between the uterus, stomach and heart. The sensory fibers come from the sacral nerves and are also distributed by the great cervical ganglion. As proof, labor may be made painless by low spinal anesthesia, and in cases of severe injury to the cauda equina. There is another ganglion on the posterior wall of the cervix. During pregnancy the great cervical ganglion grows from a small triangular mass one-half inch by three-fourths inch to a mass one and one-half inches wide by two inches long. That there are independent nerve centers probably similar to the nerve and muscle bundles in the heart is proven by the fact that the uterus can contract outside the body.

The most common and perplexing nervous problem in pregnancy is nausea and vomiting, and many theories have been

*Read before the Obstetric and Pediatric Section, Annual Meeting, Oklahoma State Medical Association, Enid, April 8, 1936.

evolved to explain it. De Lee divides it into four types:

1. Causes other than pregnancy, i. e., appendicitis, gall stone, etc.
2. Reflex.
3. Nervous, as brain tumor, meningitis, psychosis.
4. Toxic.

Since we are considering nervous and mental, we will only discuss reflex and nervous. It should not be difficult after reviewing the nerve supply to attribute to it unconditioned reflex. The ganglion and nerves being pressed upon and stretched by the growing uterus could transmit this irritation to the stomach and heart through the pneumogastric, phrenic and splanchnic nerves. As proof of the reflex cause of vomiting, it has been cured by replacing a retroverted uterus or by counter irritation with silver nitrate or even by dilatation of the cervix. However, most that were thought to be reflex have been proven to be toxic or psychic. Reflex neurosis explains very few. However, vomiting of pregnancy has occurred in lower animals.

That there is a psychic side to the nervous and mental problems of pregnancy, cannot be denied. There are many instances in the practice of everyone doing obstetrics, of psychic disturbance causing vomiting and when removed, a cure is effected. I have in mind a highly neurotic woman who when first seen was two months pregnant and had been vomiting for two weeks. She was losing weight and unable to retain anything. I put her to bed in the hospital, darkened the room, gave her glucose and sodium amytal *per rectum*. Soon she was eating and doing well, when she received a message that her brother had been injured in an automobile accident, and her vomiting promptly returned and it was several days before she could eat again. About ten days later she was well and ready to go home, when another message said that the brother must have an operation on his head, and again the vomiting returned and was not controlled until word came that the brother was recovering. She was eventually delivered of a husky male infant.

The result of psycho-analysis on these

patients reveals many and varied causes. That women have been told since early childhood that vomiting is a symptom of pregnancy; or, to show the husband the suffering a woman must endure, or because of an aversion to the husband or his religion, a subconscious aversion to pregnancy with vomiting, the subconscious attempt to abort. The aversion may be due to a childhood impression or to an unwillingness to assume the responsibilities of motherhood, or to hamper her social activities; to having another to feed or educate, and myriads of other causes. In normal cases, the adjustment is made by the third or fourth month and vomiting ceases. Temperament of the individual has an important bearing. Many more cases of vomiting are reported from the United States and France than from England or Germany, and in most instances the worst cases are in neurotic and neurasthenic individuals. It has been thought by some that reflex through the sympathetic nervous system alters the secretion of the ductless glands and organs of digestion, producing toxins and thereby causing vomiting.

Other nervous manifestations, as change of disposition, insomnia, paresthesia and hyperesthesia, jealousy, alterations of special senses, etc., are the result of the stress of pregnancy on an unstable nervous system. Much depends on the woman's mental attitude, whether the pregnancy is welcomed, or considered a danger or hazard. Fainting spells also occur which are unexplainable, except as a reflex through the sympathetic nerves, causing a dilatation of the abdominal blood vessels.

At the other end of pregnancy, there are many more and equally serious nervous and mental problems. Sudden death following delivery has occurred with no other cause than mental impression, or shock. Because of intense pain of labor some cases have gone into shock and died. A case is on record in France of a woman who was told by a fortune teller that she would die, and did die immediately following delivery. The Bible in the first Book of Samuel says that Eli's daughter, learning that her husband and father-in-law had been killed and the Ark of God taken, went into labor and died. Puerperal

insanity is not an uncommon condition— asylum statistics show eight to ten per cent of female inmates are affected at this time. It usually follows a difficult delivery, or infection, either of the genital tract or breasts, and is sometimes called lactation insanity. It may be precipitated by the death of the child, or husband, but there is usually a bad heredity. Melancholia with suicidal tendency is the most common form, but mania with infanticide tendencies occur. Recovery usually takes place in from six weeks to six months.

Many minor nervous and mental problems occur, such as paralysis resulting from injury to the sacral nerves during instrumental delivery and involvement from infections in the pelvis. Increased excitability as manifested by acuteness of special senses and anxiety over inconsequential matters. The success of lactation also is dependent on the mental attitude of the patient and the reflex stimulation produced by the suckling.

The experiments and conclusions briefly reviewed may provide an explanation for many pathological and therapeutic phenomena. In addition to the direct unconditioned reflexes which act on the various organs, the action of innumerable conditioned reflexes must always be borne in mind. Any form of treatment that is at all protracted is followed by the development of conditioned reflexes. This explains why, in addition to the details of treatment, the influence of the personality of the physician on the patient is frequently of extraordinary importance in the outcome of a disease.

International Assembly Will Be Held in October

The International Assembly of the Inter-State Post-Graduate Medical Association of North America, under the presidency of Dr. David Riesman of Philadelphia, Pennsylvania, will be held in the public auditorium of St. Paul, Minnesota, October 12, 13, 14, 15 and 16 with pre-assembly clinics Saturday, October 10, and post-assembly clinics Saturday, October 17, in the hospitals of St. Paul.

The aim of the program committee with Dr. George Crile as chairman, is to provide for the medical profession of North America an intensive post-graduate course covering the various branches of medical science. The program has been carefully arranged to meet the demands of the general practitioner, as well as the specialist. Extreme care has been given in the selection of the contributors and the subjects of their contributions.

In cooperation with the Minnesota State Medical Association, the Ramsey County Medical Society

will be host to the Assembly and has arranged an excellent list of committees who will function throughout the Assembly.

A most hearty invitation is extended to all members of the profession who are in good standing in their State or Provincial Societies to be present and enjoy the hospitality of the medical profession of St. Paul. A registration fee of \$5.00 will admit each member of the medical profession in good standing to all the scientific and clinical sessions.

A list of the distinguished teachers and clinicians who will take part on the program will appear in the September issue of this Journal.

Special railroad rates will be in effect.

For further information write Dr. W. B. Peck, Managing Director, Freeport, Illinois.

The Problem of Cancer of the Pancreas

Howard M. Clute, Boston (Journal A. M. A., July 11, 1936), presents a review from the literature and from personal experience of the symptomatology, and especially the early symptomatology, of cancer of the pancreas, and discusses the problems that are involved in the surgical attack on this lesion. He hopes that, by directing the attention of the present group of surgeons to the problem of cancer of the pancreas, further progress in the management of this disease will be made. Surprisingly few reports are to be found in the literature of successful removal of malignant tumors of the body or tail of the pancreas in the hundred years since Mondiere first described cancer of the pancreas. Recent interest in the surgical treatment of pancreatic tumors has been so stimulated by the results obtained by resection of the pancreas or of islet tumors for hyperinsulinism that an increase in the number of pancreatic cancers attacked surgically may be anticipated. Wider study of the early symptoms of pancreatic cancer will give increasing opportunity for the application of surgical and radiologic measures to the pancreas. The pancreas is no longer in the realm of the surgically 'untouchables' and can readily be approached by surgeons well trained in the management of serious abdominal diseases.

Viability of Bacterium Tularensis in Human Tissues

Lee Foshay, Cincinnati, and O. B. Mayer, Columbia, S. C. (Journal A. M. A., June 20, 1936), report the case of a patient with the ulceroglandular form of tularemia, treated by antiserum, who developed tularemic infection of the olecranon bursa three months after onset of the disease and one month after cessation of disability. No constitutional symptoms accompanied the bursitis. Regional symptoms and signs, and the cellular reaction within the bursal fluid, indicated a mild subacute or chronic infectious process. Viable virulent Bacterium tularensis was obtained from the fluid by direct cultures and by animal inoculations four months and five months after the onset of the illness, corresponding to the second and third months after cessation of all disability. Bacterium tularensis was seen in stained smears of one specimen of the fluid. Bacterium tularensis can survive in tissues of recovered patients for long periods. The ultimate outcome of these bacterial seclusions seems to depend on the solidity of the established bacteriostatic equilibrium. Tularemic infection is a distinct danger to hearts with pre-existing vascular disease. The authors know of four patients who have died abruptly following sudden severe substernal or precordial pain during convalescence from tularemia. Only one had had symptoms of angina prior to tularemic infection.

HEALTH EDUCATION

The following resolution, adopted by the Joint Committee on Health Problems in Education of the National Education Association and the American Medical Association, seems to be of sufficient importance that it will be well to bring it to the attention of the doctors of Oklahoma and all kinds of societies who are interested in health education. If this resolution can be brought to the attention of the school boards in various localities we believe it would be instrumental in improving health conditions for school children.

RESOLUTION

WHEREAS, At the annual meeting of the Joint Committee on Health Problems in Education of the National Education Association and the American Medical Association held at St. Louis, Mo., February 25, 1936, a presentation was made by Major Joel I. Connolly, of the Chicago Board of Health, relating to possible health hazards in apparently modern plumbing installations in public buildings, and

WHEREAS, It was manifest in the said presentation that plumbing fixtures which have been generally regarded as safe and sanitary in design may in fact constitute a real and serious health hazard by reason of the danger of back siphonage and contamination of water supply mains, and

WHEREAS, The probability exists that such apparently modern, safe and sanitary plumbing installations may exist in numerous school buildings in the United States, and

WHEREAS, The existence of such apparently safe, modern and sanitary plumbing installations and reliance upon them brings about a sense of false security, therefore, be it

RESOLVED, By the Joint Committee on Health Problems in Education of the National Education Association and the American Medical Association that this Committee apprehends the possibility of danger to the health of school children from apparently safe, modern and sanitary plumbing installations in school buildings, and be it further

RESOLVED, That the said Joint Committee earnestly recommends to all school boards and school executives that surveys be instituted by competent engineers to ascertain whether or not the danger of back siphonage and consequent pollution of water supply mains exist in plumbing installations within their jurisdictions, and that such surveys be followed by prompt corrective measures, and be it further

RESOLVED, That these resolutions be offered for publication to all journals dealing with public health, health education and general education.

Industrial Accident Boards Convention in Topeka

The International Association of Industrial Accident Boards and Commissions will hold its twenty-third annual convention in Topeka, Kansas, September 21 to 24, inclusive. G. Clay Baker, the Kansas Commissioner of Workmen's Compensation, is president of the Association. The convention is always held in the state where the president resides. The membership of the Association is composed of administrators of compensation laws throughout the states and territories of the United States, and the provinces of Canada. In addition to the membership that will be in attendance there will be numbers of those interested in industrial accidents from various angles, safety-insurance and medical.

It has been the custom of the Association to devote practically a day of its four day session to

phases of medical problems as applied to workmen's compensation. The program contemplates this on Tuesday, September 22, when there will be discussed such subjects as "Injection Method Treatment of Hernia," "Effect of Trauma in Lighting up T.B.," "Measurement of Schedule Injuries under the Various Acts," "Rating of Eye Disabilities."

In addition to the Tuesday medical program the Association will for the first time have a separate and distinct medical section for the doctors themselves. This will take place on Wednesday and will deal with a number of technical medical subjects with relationship to workmen's compensation. A number of doctors from over the United States will be here as well as local doctors to deal with and discuss some of these subjects.

Under the program of the Association the chairman of the Association's Medical Committee, and which committee sets up the medical program, is a doctor from the state where the convention is being held. Dr. J. F. Hassig of the Kansas Medical Society is chairman of the committee this year. The other members of the committee are:

Dr. Francis D. Donoghue, Massachusetts.
Dr. D. E. Bell, Ontario.
Dr. James D. Donoghue, Connecticut.
Dr. H. H. Dorr, Ohio.
Dr. L. K. Ferguson, Pennsylvania.
Dr. George J. Mohler, New York.
Dr. R. R. Sayers, District of Columbia.
Dr. Phillip H. Kreuscher, Illinois.
Dr. Walter L. Small, Missouri.

Mr. Baker, president of the Association, had this to say: "Members of the medical profession interested in the treatment of industrial accident cases and workmen's compensation are invited to attend particularly the Tuesday and Wednesday sessions of the convention. I feel that the medical profession plays a major part in dealing with the problem of compensation administration. In line with this the Association is this year extending the medical part of its program. It is impossible for the commissioners themselves to spend more than one of the four days on medical problems. The second day of medical sessions will be devoted to the doctors themselves in a separate meeting from the commissioners. I hope that those doctors dealing with these problems will avail themselves of the opportunity being offered. The opportunity to discuss these medical problems in meeting and individually with other doctors specializing in this work and meeting with administrators should, it seems to me, make it worth the spending of these two days in Topeka."

The Bone Marrow

R. H. Jaffe, Chicago (Journal A. M. A., July 11, 1936), asserts that the improvement in the technic of biopsies of the bone marrow has added a valuable method to the diagnostic laboratory procedures to which the clinician can resort in the cases in which the examination of the peripheral blood fails to give definite information. The importance of the examination of the bone marrow in vivo becomes evident if one considers the fact the circulating blood does not always reflect the condition of the bone marrow. Great differences exist sometimes between the cellular content of the blood and that of the bone marrow which may be the source of diagnostic errors. Since the biopsy of the bone marrow is expected to become widely used in clinical medicine, he presents a brief discussion of the normal bone marrow and of the changes that are observed in some of the important disturbances of blood formation.

THE JOURNAL

OF THE

Oklahoma State Medical Association

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DR. L. S. WILLOUR.....Editor-in-Chief
McAlester, Oklahoma

DR. T. H. McCARLEY.....Associate Editor
McAlester, Oklahoma

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The editorial department is not responsible for the opinions expressed in the original articles of contributors.

Reprints of original articles will be supplied at actual cost provided request for them is attached to manuscripts or made in sufficient time before publication.

Articles sent this Journal for publication and all those read at the annual meetings of the State Association are the sole property of this Journal. The Journal relies on each individual contributor's strict adherence to this well-known rule of medical journalism. In the event an article sent this Journal for publication is published before appearance in the Journal the manuscript will be returned to the writer.

Failure to receive The Journal should call for immediate notification of the Editor, McAlester Clinic, McAlester, Oklahoma.

Local news of possible interest to the medical profession, notes on removals, changes of addresses, births, deaths and weddings will be gratefully received.

Advertising of articles, drugs or compounds unapproved by the Council on Pharmacy of the A. M. A., will not be accepted.

Advertising rates will be supplied on application.

It is suggested that wherever possible members of the State Association should patronize our advertisers in preference to others as a matter of fair reciprocity.

Printed by News-Capital Company, McAlester

EDITORIAL

ADVERTISING UNPROVED PRODUCTS CREATES DANGEROUS SITUATION

ELI LILLY AND COMPANY
INDIANAPOLIS, U. S. A.

July 2, 1936.

Journal Oklahoma State
Medical Association
Dr. L. S. Willour, Editor
McAlester, Oklahoma

Dear Dr. Willour:

As an advertiser in your Journal, we wish to acknowledge your excellent editorial of June 1936 entitled PATRONIZE OUR ADVERTISERS. Editorial co-operation of this sort is help-

ful and appreciated by those who occupy your advertising pages.

Very truly yours,

ELI LILLY AND COMPANY

John S. Wright, Director

Advertising Department

JSW-M

The above letter would indicate that the efforts of your Editor, to advance through our advertising space the standard of remedies used in the prevention and treatment of disease, are appreciated by the pharmaceutical houses that manufacture this character of products.

In looking over the advertising in some of these "throw away" medical publications we find all sorts of claims as to their virtues. Here we see the ethical, approved product and the unethical, quack product side by side, with no way of discriminating between the good and the bad and no one to vouch for the truthfulness of the claims made by the advertiser. It is impossible for any physician to give the time necessary to investigate each product in the advertising columns of these "near" Journals, the claims attract the attention of all readers and the authenticity of the claim is not always carefully considered and this makes a dangerous situation.

BE SMART! Do not fall for these unproven products; accept as fact only the advertising that appears in Journals where the honesty of the manufacturers and the truth of the claims have been thoroughly investigated before being presented to the profession.

Your Journal is that sort of a publication.

PROPOSED LEGISLATIVE PROGRAM

The following letter has been sent to the President and Secretary of each County Medical Society and is published for the information of the membership:

July 20, 1936.

TO THE MEDICAL PROFESSION OF OKLAHOMA:

As Chairman of the Legislative Committee, after many conferences with the Committee and the Council as a whole and much labor by the official attorney of the Association, Mr. J. Berry King, we have proposed a Medical Practice Act and have sent it to the American Medical Association for scrutiny and corrections. They still have this

article and have not completed their comments and suggestions on it.

So that you might be able to go to your candidates for the Legislature and the Senate with something definite, you may advise them that we propose to change the Medical Practice Act so that it will do away with corporation practice, just as the lawyers have seen fit to do in their good Legal Practice Act as well as the Dentists in their practice act that was passed last year.

We propose to have this act so that a layman will not be able to promote the medical profession out of a cut by the promotion of groups manned and controlled by lay citizens. We propose to eliminate groups who are preying upon the different doctors by hiring them for a nominal sum, thereby letting the head of the concern get the main income of his labor.

We propose to introduce legislation to make it mandatory for all car owners to protect the public, and more especially the people in the hospital, from wrecks caused by that car.

We propose to try and get medical legislation passed to keep medical practice in the hands of the profession. In other words, Examining Boards and all important appointive positions to be recommended by organized medicine, so that the governor who knows nothing about the profession will be prevented from backing a medical man from among his strongest supporters. That being oftentimes his main qualifications.

We also propose to introduce a Basic Science Law separately from the Medical Practice Act. We believe that the Basic Science Law needs no explanation.

We sincerely hope, with a united front from the Medical Profession, to get all articles referred to above incorporated in our state laws at the very next session of the legislature.

As soon as our different bills, that is the Medical Practice Act and the Basic Science Law, are completed we will send each component Medical Society a copy of the proposed bills so that they may have time for scrutiny and any suggestions they may wish to submit to the Committee and Council.

This is our fight and it cannot be won without the unanimous support of all organized medicine, dentists, nurses and druggists in the state.

Among the most important features of the fight is that each County Society immediately raise their allotment as was directed by the Council following the action of the House of Delegates. Your immediate response with the quota from your County Society is imperative.

H. K. Speed, M.D., Chairman,
McLain Rogers, M.D., Member,
C. B. Barker, M.D., Member.

Editorial Notes—Personal and General

DR. J. SAMUEL BINKLEY, formerly associated with the Memorial Hospital of New York City, (for the treatment of cancer and allied diseases), has returned to Oklahoma. His practice will be limited to general surgery and the diagnosis and management of neoplastic diseases, with offices at 805 Medical Arts Building, Oklahoma City.

DR. A. J. WELLS, Calera, was named President of the Southeastern Oklahoma Medical Association when that organization met in July at Poteau.

DR. J. A. HAYNIE, Durant, who has served as secretary for the past fifteen years was re-elected.

DR. G. C. MOORE, Ponca City, is spending two weeks at the Jackson Clinic, branch of the University of Colorado school of medicine, doing post-graduate work.

DR. JACKSON BARKER, recently of Touro Hospital, New Orleans, where he has been an interne for two years, is a new staff member of the Nuckols, Vance, McElroy Clinic, Ponca City.

DR. JAMES S. PETTY, Guthrie, will be associated with his father, DR. C. S. PETTY, doing general practice, after serving his internship at the St. Louis City Hospital.

News of the County Medical Societies

Carter County Medical Society met August 3, 1936, at 7:00 p. m. in the dining room of the First Baptist Church, Ardmore, with a homecoming honeymoon barbecue chicken dinner honoring Dr. and Mrs. J. L. Cox and Dr. and Mrs. L. C. Veazey: The program follows:

Invocation—Dr. Williams, pastor of the First Methodist Church of Ardmore.

"High Points of the Post-Graduate Work of the Cleveland Clinic"—Dr. R. C. Sullivan, Ardmore; discussed by Dr. D. M. Higgins of Gainesville, Texas.

"Milk as a Food"—Mr. W. B. Lanphere, director of Oklahoma City Bureau of Dairy Control, Oklahoma City; discussed by Dr. J. M. Gordon, Ardmore.

"Needed Legislation, Briefly Stated"—By President-elect Dr. Sam A. McKeel, Ada.

"Advice to Newly Married Doctors"—Dr. Alfred R. Suggs, Ada.

"Advice to Newly Married Wives of Doctors"—Mrs. Walter Hardy, Ardmore; discussed by all the doctors' wives present.

RESOLUTIONS

DOCTOR J. E. WALKER

WHEREAS, the Supreme Architect of the Universe in His infinite wisdom has seen fit to call from among us Dr. J. E. Walker, who for many years labored faithfully in his chosen field for the alleviation of the suffering of humanity; and

WHEREAS, his vacant chair is an ever present reminder that his absence from his accustomed place among us is keenly felt by those of us who must carry on without him.

THEREFORE, Be It Resolved: That the Pottawatomie County Medical Association pause in its deliberations to pay tribute to his memory and to express to his family and friends our deepest regrets and heartfelt sympathy in token of which be it further resolved that a copy of this resolution be presented to the family, a copy spread upon the minutes of this Association, and a copy furnished to The Journal of the Oklahoma State Medical Association.

Dated this twentieth day of June, A. D. 1936.

F. L. Carson,
A. C. McFarling,
Committee.

LEGISLATIVE FUND

County	Allotment	Amt. Paid
Adair	\$ 40.00	
Alfalfa	70.00	
Atoka-Coal	30.00	\$ 10.00
Beckham	140.00	140.00
Blaine	90.00	
Bryan	240.00	110.00
Caddo	240.00	
Canadian	230.00	
Carter	260.00	
Cherokee	30.00	
Choctaw	70.00	60.00
Cleveland	270.00	
Comanche	190.00	
Cotton	90.00	90.00
Craig	150.00	80.00
Creek	330.00	150.00
Custer	230.00	210.00
Garfield	420.00	
Garvin	150.00	
Grady	230.00	160.00
Grant	40.00	
Greer	120.00	
Harmon	80.00	
Haskell	60.00	40.00
Hughes	170.00	
Jackson	160.00	
Jefferson	110.00	
Johnston	10.00	
Kay	340.00	220.00
Kingfisher	90.00	
Kiowa	170.00	
Latimer	40.00	
LeFlore	160.00	100.00
Lincoln	150.00	40.00
Logan	200.00	
Major	30.00	
Marshall	50.00	
Mayes	110.00	10.00
McClain	60.00	
McCurtain	70.00	
McIntosh	60.00	50.00
Murray	110.00	
Muskogee	520.00	10.00
Noble	40.00	
Nowata	50.00	
Okfuskee	150.00	
Oklahoma	2740.00	630.00
Okmulgee	320.00	
Osage	220.00	
Ottawa	310.00	
Pawnee	100.00	90.00
Payne	250.00	140.00
Pittsburg	360.00	70.00
Pontotoc	300.00	290.00
Pottawatomie	330.00	
Pushmataha	80.00	
Rogers	120.00	
Seminole	320.00	
Sequoyah	10.00	
Stephens	220.00	
Texas	50.00	
Tillman	100.00	
Tulsa	1980.00	
Wagoner	40.00	
Washington	250.00	210.00
Washita	120.00	
Woods	190.00	130.00
Woodward	260.00	150.00

NOTE—Corrections and additions to the above list will be appreciated.

Post-Graduate Course on Tuberculosis at
Tulsa, Oklahoma, September 24, 1936

To aid physicians in early diagnosis of tuberculosis, especially among children and young people, and that they may better familiarize themselves with management and care of tuberculosis infection in these age groups, the Oklahoma Tuberculosis and Health Association will conduct an institute on September 24, 1936, at Tulsa. Meeting will be held in the new home of the Tulsa Public Health Association.

The following program has been arranged:

1:15 P. M.—“Home Management of Childhood Tuberculosis”—Dr. F. P. Baker, Superintendent Eastern Oklahoma Tuberculosis Sanatorium, Tahleah, Oklahoma.

1:50 P. M.—Discussion—Dr. W. C. Wait, Superintendent Western Oklahoma Tuberculosis Sanatorium, Clinton, Oklahoma.

2:05 P. M.—“Procedure in Finding Source of Contact in Children Showing Reaction to the Tuberculin Test”—Dr. L. J. Moorman, Oklahoma City.

2:40 P. M.—Discussion—Dr. O. A. Flanagan, Tulsa, Oklahoma.

2:55 P. M.—“Manifestations of Early Tuberculosis and X-ray Interpretations”—Dr. R. M. Shepard, President Oklahoma Tuberculosis and Health Association, Tulsa, Oklahoma.

3:30 P. M.—Discussion—Dr. R. M. Burke, Soldiers' Hospital, Sulphur, Oklahoma.

3:45 P. M.—“Importance of Tuberculin Tests and X-ray in Childhood and Youth”—Visiting speaker to be selected.

4:30 to 5:30 P. M.—Clinics and questions.

7:30 to 9:30 P. M.—Public meeting. General address (speaker to be selected). Movies—“Tuberculosis and How It May Be Avoided,” “Contacts,” and “Story of My Life by Tee Bee.”

Carl Puckett, M.D., Managing Director, Oklahoma Tuberculosis and Health Association.

CHANGES OF ADDRESS

Alfalfa County

Ludlum, E. C. Carmen (renewal)

Carter County

Gordon, J. M. Ardmore (change)

Sain, W. C. Ardmore (change)

Von Keller, F. P. Ardmore (change)

Cotton County

Stephens, F. G. Walters (new member)

Garfield County

Bitting, B. T. Enid (renewal)

Johnston County

Looney, J. T. Tishomingo (renewal)

Kay County

Darnell, E. E. Yakima, Washington (change)

Spence, Harry M. Dallas, Texas (change)

Mayes County

Rutherford, V. M. Woodward (change)

Oklahoma County

Gray, Floyd 1200 North Walker (renewal)

Tulsa County

Edwards, D. L. 203 Philcade Bldg. (change)

Nelson, F. L. 607 Atlas Bldg. (change)

Tucker, I. N. 149 Hollywood Drive,
New Orleans (change)

OBITUARIES

DOCTOR H. COULTER TODD

In the peace and quiet of the home which was always the center of his activities, Dr. H. Coulter Todd passed to his eternal reward on June 25th, 1936. Although he had full knowledge of the seriousness of his physical condition for some time, he elected to continue with his work for others as attested by the fact that he was active as usual the day prior to his death.

Dr. Todd was born in Woodstock, New Brunswick, Canada, on April 15, 1874, the son of Rev. F. S. Todd and Sarah Block Todd. Both his father and grandfather were members of the Baptist ministry and it was the plan and desire of his father that Dr. Todd should follow the profession of his immediate ancestors. These plans, while not consummated in entirety, were probably responsible for the fact that Dr. Todd, on various occasions occupied the pulpit of his church both in Maine and in Oklahoma.

Dr. Todd's education was begun in the public schools of Woodstock; he also attended St. Stephens High School and the Provincial Normal School of New Brunswick. He was an honor graduate with the degree of B. A. from the Arcadia College at Wolfville, Nova Scotia, in 1897. Arcadia is one of the oldest Canadian colleges and is affiliated with Oxford University under the colonial affiliation. He took his M.D. degree at Bowdoin College in 1900 and then served as surgical interne for one year at the Maine General Hospital, Portland, Maine. Following this, he did two years of general practice in Brunswick, Maine.

In 1902 Dr. Todd came to Oklahoma City and engaged in a general surgical practice. In 1905-1906, he took post-graduate work in eye, ear, nose and throat in London and continental European schools. In 1907, he received his M.A. degree from Arcadia University. On his return to Oklahoma City, Dr. Todd became associated with the late Dr. L. H. Buxton in the specialty of eye, ear, nose and throat. This association continued until 1916.

During his student days at Wolfville, Dr. Todd apparently found time for social as well as scientific activities since in 1893, he married another Wolfville student, Miss Lilla Lencuhay. To this fortunate union one son, Dana, was born and he remains to comfort his mother in this disruption of ties existent for forty-three years.

Throughout his professional life, Dr. Todd was interested in medical education. He was one of the original founders of the old Epworth University Medical School. With West and Young, of pleasant memory, and others he was directly responsible for the beginning of the school which later became the Medical School of the University of Oklahoma. In fact, Dr. Todd delivered the first lecture given at Epworth in September of 1904 and served as the Secretary of the Faculty for years. When the merger of the two schools

was made, Dr. Todd was appointed Professor of Otolaryngology and continued in that capacity until the time of his death.

Many honors had come to Dr. Todd. In 1929, at the end of twenty-five years in medical education in Oklahoma, he was given the honorary degree of Doctor of Science by Arcadia University. He was only the third medical doctor to receive such an honor from this school, one of the others being Dr. W. W. Chipman of Montreal, a former president of the American College of Surgeons. He also received the honorary degree of Doctor of Laws from Webster College in 1926. He was a Fellow of the American College of Surgeons, member of the American Medical Association and its affiliated State and County organizations, the American Academy of Medicine, the American Academy of Ophthalmology and Otolaryngology and a number of other medical and scientific societies several of which he has served as president and other official capacities.

Dr. Todd's scientific writings have been numerous. He wrote a "History of Medical Education in Oklahoma" published by the University Press in 1928. Perhaps his best known article, "The Snare Versus the Sluder Operation," which was published in the American Medical Association Journal in 1914 and was also introduced in full in the International Medical Journal of Berlin, Germany, that same year. His chief avocation was his secular writings.

This avocation was one aspect of Dr. Todd's life which was little known, since while he had many acquaintances, he had few intimates. He was the author of one novel and also a book of poems. It was a fortunate, although a rare, privilege to hear and see Dr. Todd surrounded by his intimate friends recite the poems of his own composition. Indeed, this work was never given its true rhythm and beauty without the author's own interpretation.

H. Coulter Todd was of a deeply religious nature by inheritance, early environment and training. This nature, however, did not narrow him to the philosophies of his own denomination but manifested itself in interest in many other religions as well. He was always an interesting conversationalist on the philosophies of this life and the hereafter and had a great respect for the opinions and faiths of others.

One of Dr. Todd's most pleasing traits was his genuine friendliness. He never lost the common touch in spite of the heights to which he had climbed. He delighted to be called by his first and rarely used first name, Harry. He would say that such an intimate occurrence would always remind him of his old home in Canada and his boyhood. Harry Todd realized his own weaknesses but was so constituted that he overlooked the faults of others and at the same time magnified all their good points.

The medical profession of Oklahoma City and the state which has been so profoundly influenced by his life will miss him to the

OBITUARIES

same degree. He has been lost at a time when we could ill afford it since now if ever we need such men to combat sinister influences all too prevalent. He and his associates have laid well the foundation of medical education and practice in this state and the younger generation cannot do better than to follow the example, so completely patterned, of devotion to duty, unselfishness, steadfastness even in adversity, and above all true scientific achievement.

DOCTOR ARTHUR BROWN CHASE

Dr. Arthur Brown Chase was born February 19, 1870, in Lynn, Massachusetts. He graduated from the Harvard University Medical School in 1892. He then interned for two years at the Lynn Hospital, afterward doing a general practice in Lynn for twelve years, later going to Atchison, Kansas, to practice his chosen profession, then coming to Oklahoma City. He married Florence Ethel Aldous (who survives him) on July 9, 1910. He was a thirty-second degree Mason, member of the Oklahoma Club, and a member of the Episcopal Church, Men's Dinner Club, and Alpha Kappa Kappa medical fraternity. He was a Fellow in the American College of Physicians since 1920, and of the American Medical Association and Southern Medical Association and a Councilor in the State Medical Association where he had taken a very active part in this, as well as other medical societies. He is a past president of the Oklahoma County Medical Society. He gave freely of his time and his talents in furthering the cause of organized medicine in this state.

It was early apparent to him that a chronic heart lesion would necessitate the conservation of his strength, and this was not possible to do in a general practice. He, therefore, began intensively to perfect himself as a cardiologist, studying in this country as well as abroad. Thus he later attained a well merited reputation for efficiency in his chosen specialty. He has been connected with the University of Oklahoma, after coming to Oklahoma City, in varying capacities up until 1926, when he was made a Professor of Clinical Medicine, and in 1936 he was made Professor of Medical Ethics.

For the past two years he has been notably failing in health until on July 8th, on leaving his office, he fell and hit his head on the concrete pavement, producing a subarachnoid hemorrhage. He was removed to St. Anthony's Hospital where it appeared that he was improving for one week, and a faint hope was held for his recovery, but later he began sinking and died on the twentieth of July.

Dr. Chase was exceptionally well liked by his many associates. He was a genial soul whose chief enjoyment was talking to medical students, internes, and those interested in medicine. He would sit around the hospitals talking to the younger men on the art

and science of the practice of medicine, and little concept can be known what good has been done to the personnel of the medical profession of this state. He endeared himself to those with whom he came in contact, and his vast circle of friends will feel a great void made by his passing.

DOCTOR WILLIAM J. MUZZY

Dr. William J. Muzzy was born October 12, 1866, in Ramsey, Illinois. He died July 12, 1936.

He came to Canadian County, Oklahoma, April 22, 1889, in the run from Winfield, Kansas, and settled a homestead near Banner, Oklahoma. Dr. Muzzy sold the homestead to finance a medical education at the Missouri Medical College at St. Louis, Missouri, from which he was graduated in 1897 cum laude.

Dr. Muzzy returned to El Reno where he opened an office for the practice of medicine. He became a member of the staff of the El Reno Sanitarium at its inception in 1902.

In 1910 he took up the specialty of pathology after special courses of study in New York, Chicago, St. Louis and New Orleans. In 1927 he was made a fellow in the American Society of Clinical Pathologists, and served as pathologist for the El Reno Sanitarium until his death.

Dr. Muzzy was a past president of the Kiwanis Club, member of the Chamber of Commerce, affiliated with several fraternal organizations, and the Methodist Church. His main interest, however, was always in his chosen specialty as pathologist.

He was recognized by his associates as an extremely conscientious and exacting worker. He has always been affiliated with organized medicine. He was one of the organizers and a past president of the old Central Oklahoma Medical Society. He was past president of the Canadian County Medical Society, and served for a number of years as secretary of that body.

Dr. Muzzy was held in high esteem by those who knew him, and his loss is keenly felt by those who have been associated with him.

DOCTOR ARTHUR MASTER RUHL

Dr. A. M. Ruhl, pioneer physician of Edmond, died June 27th, following a short illness.

He was born in Pekin, Illinois, February 15, 1876. His early life was spent in Illinois, moving to Logan County, Oklahoma, with his parents in 1889, moving to Edmond in 1895 where he continued to reside until his death.

Burial was in Edmond, under the direction of the Masonic order.

Dr. Ruhl is survived by his wife and one daughter.

RECENT DEATHS

(Insufficient data available for obituary)

Dr. David Breco, Ada, drowned July 2, 1936.

ABSTRACTS : REVIEWS : COMMENTS and CORRESPONDENCE

PLASTIC SURGERY

Edited by GEORGE H. KIMBALL, M.D., F.A.C.S.
204 North Robinson Avenue, Oklahoma City

Ectropion: A Problem for Eye Surgeons. By John M. Wheeler, M.D., New York, N. Y. From *Southern Medical Journal*, Vol. 29, No. 4, April, 1936.

There is a mild conflict of ideas regarding repair surgery about the eyes. Men who are devoting themselves to plastic surgery find much of their work about the face, and some of them see no reason for stopping at the eye region. Perhaps it is not for the ophthalmologist to pass judgment on whether the plastic surgeon is right or wrong in including the eye region in his realm, but surely the ophthalmic surgeon should enter into vigorous competition with the plastic surgeon and claim the eye region as his own. I am convinced that patients needing plastic repair about the eyes would be well served surgically if eye surgeons would devote themselves to acquisition of skill in plastic procedures as they do the study of surgery of the eyeball. I should like to take this occasion to bespeak the interest of our younger eye surgeons in the maneuvers that make up eye plastic surgery. Let me suggest to those who are setting out to qualify as ophthalmologists that they consider the acquisition of skill in plastic procedures as part of proper preparation for the practice of ophthalmology if they propose to include surgery in their practice. A great variety of interesting and difficult problems offers a fascinating challenge to the ingenuity and skill of the surgeon. I should like to see the trained ophthalmologist ready to liberate the necessary ingenuity and skill.

What does one reasonably mean by the surgical eye region? I think the answer can be stated. It includes the contents of the orbit, the eyelids, the eyebrows and the adjacent surroundings when they harbor processes that affect these structures. If a scar extends from an eyelid beyond the orbital margin into the malar region or into the brow or cheek it might be absurd for the eye surgeon to fail to get rid of such a scar in correcting a lid deformity. A reasonable attitude should guide the eye surgeon in deciding where to stop.

Gasparo Tagliacozzi (1546-1599) said: "In order to live a graft must have an attachment. It cannot be completely severed from surrounding tissues. It must have a pedicle."

This dictum has had a profound influence on plastic surgeons. It was taken as gospel until Jacques Louis Reverdin, a young Swiss doctor who was serving as interne at l'hôpital Necker in Paris, demonstrated in 1869 that it was possible for the surgeon to transplant bits of epidermis to a granulating surface and have these little grafts live. In spite of his demonstration and the additional demonstrations of Ollier, Thiersch, Wolfe and many others, able surgeons still are dominated by the idea of necessity of pedicles for grafts. So, in the correction of ectropion many competent men

still choose to use pedunculated flaps. In doing so, they accept a serious handicap and I should like to say that there are very few cases of ectropion that call for flaps with pedicles.

The author brings out some very fine ideas dealing with the problem of ectropion. Skin taken from the upper eyelid for a defect in the lower lid is a very good idea. Also the skin taken from behind the ear matches in texture and thickness for the reconstruction of the skin of the lid. In cases of involvement of both lids, the epithelium from the thigh or the arm may be used.

Taken in order, the sites of sources of skin for grafting about the lid may be listed as follows:

1. Dermis from upper eyelid.
2. Dermis from cephalo-auricular angle.
3. Dermis from the temple.
4. Epidermis from the outer aspect of the thigh.

The author points out some very good points in technique about sutures, the type of splint for the graft and the dressings.

CONCLUSIONS: I see no reason why a competent eye surgeon cannot or should not do the simple grafts about the eyelid. Some of these procedures are very simple. Certainly a highly trained eye surgeon who can correct squint and do other technical operations about the eye ball should very easily master the simple plastic procedures, especially that of ectropion.

It is fairly easy to get a good "take" in a case of ectropion by means of a thin split graft. It is not so easy to secure a good result or a good "take" with a full thickness graft. However, the final result is better if a thick graft can be used.

Cancer of the Face and Oral Cavity: Surgery Versus Radiation. By Albert O. Singleton, M.D., Galveston, Texas. From *Southern Medical Journal*, Vol. 28, No. 7, July, 1935.

The author reviews the cases treated by radiation and surgery over a period of twenty years. He finds that the mortality from cancer of the face and lip is high; that the mortality for cancer of tongue is higher and that cancer of the oral cavity elsewhere is only occasionally cured.

TABLE I.—DIED IN HOSPITAL

	Number Patients	Died in Hospital	Per Cent
1912-20	82	20	24
1922-30	101	38	37

Again we find that in the first group of patients followed thirty-two per cent died in the hospital or within five years after leaving the hospital, as compared to forty-four per cent in the later group.

TABLE II
KNOWN DEAD WITHIN FIVE YEARS

	Number Patients	Died	Per Cent
1912-20	82	27	32
1922-30	101	45	44

The first question naturally arising is what is the cause of the increasing mortality? In order to

answer this question we look to see what difference there has been in the methods of treatment in these two groups, and whether the treatment has influenced the mortality? In answering these questions we find that in the former group surgery alone was used, while in the second group surgery with varying amounts of radium and x-ray was used. If we did not look further one would infer that the addition of radium and x-ray had retarded rather than improved our results, but a close scrutiny shows a more concrete reason, and that is the difference in the stage of the disease when the patients were received for treatment.

TABLE III

	Number Patients	Per Cent Inoperable	Per Cent Operable
1910-20	82	21-25½	61-74½
1922-30	101	46-45½	55-54½

In the first group a much higher percentage were received earlier in the disease with fewer glandular metastases and a smaller number were classed as inoperable or incurable, while in the latter group a greater number were received late in the disease with more extensive ulceration and glandular involvement. In the former group of those which were received late, some had been treated with caustics and pastes, and some had had incomplete surgery, such as local attempts at surgical removal of the lesion with recurrence, or a failure to remove the glands of the neck. Of the latter group few had had paste and caustics applied, a few incomplete surgery while a very large number had been treated by radium and x-ray without surgery. For fear that I may be misunderstood, I should add here that incomplete treatment by radium and x-ray were generally used. These preceding statements lead me to the chief subject of my paper, which is the discussion of these conditions, between surgery and radiation.

DISCUSSION

There are enough known facts if properly and promptly applied to solve the cancer problem. Cancer must be found early if many are to be cured. But whether early or late, the management must be in the hands of the well trained. The radiologist must admit that surgery has an important place in curing cancer. The surgeon also can no longer ignore the results of radiation. While surgery some years ago reached its zenith in this field, radiation is still progressing. With increasing experience, new methods are being developed with great improvement in results. We as surgeons must keep an open mind and accept improvements as they are proven. Radiation is very dangerous as it is now generally used by the poorly informed and poorly equipped, but on the other hand, in the hands of the well trained and well equipped, great things are being accomplished. Again, it is hardly possible to expect the surgeon to be an expert radiologist and to be familiar with the changing technic of x-ray or radium. Also, one does not expect the radiologist to be able to use the good points of surgery. Therefore, if the patient is going to have the advantage of everything that can be done for him, the surgeon and radiologist must work jointly.

COMMENT: The cancer problem is far from being solved in spite of the publicity campaigns which have been instituted during the past ten years. In the first place, institutions properly equipped are not available for the poor who make up a large part of our population. Great strides have been made in providing for cure of the indigent crippled children, but not for the cancer victim. Secondly, the cancer patient is going and is being sent to roentgenologists, the great majori-

ty of whom are not equipped or properly trained in the use of radiation. This has resulted in a higher mortality in cancer of the face, lip and oral cavity at this time than twenty years ago. The mortality with the best surgery and the best radiation is still high. Improvement in the equipment and training of roentgenologist, is greatly needed at this time. In the general hospital every cancer patient should have the benefit of combined efforts of the departments of surgery, radiology and pathology.

There should be no unfriendly controversy between the radiologist and the surgeon in the treatment of malignancies about the lip and mouth. Instead there should be team work with radiologist, surgeon and pathologist. The results obtained today can be improved by all concerned working in harmony.

One sees quite frequently a persistent ulcer secondary to radiation or x-ray treatment of a malignant ulcer. A great many of these ulcers can be successfully excised.

When a surgeon begins to blame the radiologist for a dermatitis or post-radium ulcer, he is not helping the patient or the means of treatment. I say this for the reason that the surgeon is just as apt to have an excessive scar or a keloidal scar following operative work.

ORTHOPAEDIC SURGERY

Edited by Earl D. McBride, M.D.
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PELLEGRINI STIEDA DISEASE

Pellegrini Stieda Disease. Nathan H. Rachlin, Brooklyn, N. Y. *Journal Bone and Joint Surgery*, Vol. XVI, No. 3, July, 1934.

Pellegrini Stieda Disease. Jacob Kulowski, Iowa City, Iowa. *Journal A. M. A.*, April 1, 1933. Vol. 100, No. 13.

Bohler. Treatment of Fractures, 1935. 4th Edition. Pages 383, 385.

Pellegrini stieda disease is characterized by a semilunar-like formation in the region of the internal condyle and is always traumatic in origin. Pellegrini in 1905 called attention to a traumatic ossification of the collateral tibial ligament of the knee. In the same year Kohler reported a similar case and in 1907 Stieda made report. Pellegrini thought the condition was traumatic and Stieda believed it was due to a fracture with a detachment of a small piece of bone at the moment of injury with a calcification taking place in the ligament. Some believe it is of periostitic origin; others that it arises from the surrounding connective tissues. Kulowski believes that it is similar to a myositis ossificans. More than one hundred and thirty-six cases have been reported in Germany and Italy.

The treatment is both conservative and surgical. After four months the patient is symptom free and active, despite the recurrence of the mass. It is thought that no surgical procedure should be instituted before the bony mass has matured, just as a myositis ossificans. Surgical removal of the calcified body has given good results but a number of cases have been fully relieved by a conservative treatment.

Abstractor's note: I have given the above reference to this condition because it is one which has been generally overlooked. It has been seen a number of times in industrial cases but termed myositis ossificans or osteoarthritis. Since it is appar-

ently being classed as a definite clinical entity, those who frequently are called upon to examine knee joints should be fully acquainted with this condition.

New Methods of Leg Amputation. G. A. Reinberg and A. V. Kaplan. Soviet Surgery, XII, 65, 1935.

To avoid the usual post-operative complications of leg amputations a new method is suggested. Based on cadaver study, it gave apparently satisfactory results in nineteen cases in which operations were performed by seven surgeons.

An anterior skin flap is dissected out, its base being wider than the half of the circumference of the leg and its length more than the diameter of the leg. A horizontal skin incision unites the proximal ends of the flap posteriorly. The skin in the back is separated from the soleus. The Achilles tendon is cut from above downward and from the back forward. The triceps surae is separated from the bones of the leg to the level of amputation. The bones are sawed through and smoothed out. Two flaps are thus formed, an anterior flap and a posterior musculo-aponeurotic flap. The muscular flap is united to the periosteum of the tibia in front, and the skin flap is attached to the skin of the back of the leg.

Late Results of the Operative Treatment of Osteo-Arthritis of the Hip Joint. C. Max Page. Lancet, I, 1313, 1935.

After analyzing one hundred twelve cases in which operations had been performed during the past five years, the author concludes that of the two procedures—arthrodesis or arthroplasty of the hip joint—arthrodesis gives the best late results. He states that in regard to arthrodesis better technique does give better results; however, the most ingenious arthroplastic procedures may result in a stiff hip while a rough reconstruction operation may produce a freely movable hip. The vascular supply of the parts seems to the author to be the important determining factor.

Of the sixty-nine cases in which arthrodeses were performed, the author reports good results in seventy per cent, moderate results in 17.4 per cent, and bad results in 11.6 per cent. Of the nineteen cases in which arthroplasties were done, good results were obtained in thirty-seven per cent, moderate results in thirty-one per cent, and poor results in thirty-one per cent.

The operative procedures used for fusion were resection of part of the head of the femur and resection of part of the acetabulum. An iliac graft was occasionally used. For arthroplasties, the Whitman operation was employed.

INTERNAL MEDICINE

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By HUGH JETER, M.D.

Progress in Internal Medicine. Blood. A Review of the Recent Literature. Raphael Isaacs, M.D., Cyrus C. Sturgiss, M.D., Frank H. Bethell, M.D., and S. Milton Goldhamer, M.D., Ann Arbor, Mich. Archives of Internal Medicine, Vol. 57, No. 6.

This is the second review of hematology in which the authors attempt to summarize the essential recent articles on blood diseases.

PERNICIOUS ANEMIA

ETIOLOGY: Castle has reviewed recent work

regarding the cause of pernicious anemia and related macrocytic types and reiterated his theory that Addison's pernicious anemia is due to a lack of gastric factors in the stomach. He says the factor is not hydrochloric acid or any of the recognized ferments of gastric secretion, and is thermolabile and not present in saliva or duodenal contents.

He states that the nature of the extrinsic factor is also unknown, but has wide distribution, being present in beef muscle, eggs, autolyzed yeast, rice polishings, wheat germ and liver. This substance is thermostable.

Miller and Rhoads by feeding swine a modification of a diet that produces black tongue in dogs, have produced a condition characterized by hematologic, lingual and gastro-intestinal changes which are similar to those seen in cases of pernicious anemia. It is suggested that the disease thus produced may, therefore, be caused by lack of or the inability to utilize, some poorly defined dietary constituent, as in pernicious anemia, sprue and tropical anemia.

Goodman, Geiger and Claiborn, have found that liver extract prepared from gastrectomized animals has diminished anti-anemic potency which may be detected as early as the third month after gastrectomy.

Meulengracht has found that material from the fundus was inactive whereas from the pyloric region was exceedingly potent.

Wakerlin reported the presence of an anti-anemic principle in normal urine.

DIAGNOSIS: Minot deplored the fact that so little attention has been given to a diagnosis in recent years since so much interest has been taken in treatment. One hundred cases were studied, thirty-three per cent complained of weakness as an initial symptom, thirty-one per cent gastro-intestinal, twenty-six per cent nervous system and ten per cent heart symptoms. The diagnosis was not established until an average of one and one-third years after the onset. Lemon color and splenomegaly is considered to be less common than previously.

GASTRIC JUICE: Two groups of investigators have noted increased potency of liver extract by incubation with gastric juice.

The effectiveness of gastric juice injected intramuscularly has been confirmed.

A simple test to determine the presence or absence of the intrinsic factor has been devised.

The nature of the intrinsic factor is thought by some to be an enzyme and by others to be a hormone.

MANIFESTATIONS DUE TO LESIONS IN THE SPINAL CORD AND BRAIN: The most common neurological symptoms are numbness and tingling of extremities, coldness, ataxia, loss of finer coordination of the fingers and disturbances of the bladder.

Conclusions drawn from benefits of therapy must be guarded.

BLOOD: Schmehle and Schmid claim that relapse is less likely when the color index reaches normal than when it remains high, even after the erythrocyte count reaches normal.

Wintrobe and Shumacker called attention to certain similarities between the blood of the fetus and that of patients with pernicious anemia.

Isaacs found no simple correlation between the total number of nucleated cells of the bone marrow of the sternum and of the peripheral blood stream. There was considerable variation in the cellularity of the marrow in different persons.

Sanford emphasized the fact that the blood may

be normal in persons with involvement of central nervous system and reports three cases with good response to liver extract therapy.

Minot and Castle made an excellent summary of the present knowledge of the behavior of reticulocytes in cases of pernicious anemia in which remissions were induced. They called attention to "irritant effects" of such substances as potassium arsenite.

Murphy warned against one placing too great emphasis on comparable reticulocyte responses.

TREATMENT: Wilkinson again emphasized the necessity of permanent use of a potent stomach or liver extract.

Miller and Rhoads found that the extrinsic factor is present in the white of egg. Mogensen pointed out that there is a form of pernicious anemia in which there is a deficiency of iron and in which large doses of iron are necessary to supplement the liver therapy.

West summarizes the present knowledge concerning the chemical nature of hematopoietically active substances of the liver.

Minot in the Nobel lecture emphasized the necessity of giving sufficient potent material to supply besides the hemopoietic requirements, all the demands of the body for the substance and in addition to fill it adequately with a reserve. He wisely added "the physician however, must do more for the patient than prescribe a proper amount of liver, stomach or the like; he should attend to aspects of the case and not neglect the individual's manifold problems of thought and action."

MACROCYTIC ANEMIA OTHER THAN PERNICIOUS ANEMIA: It is generally accepted that the interaction of the extrinsic and intrinsic factor produces a substance necessary for the normal development of the erythrocytes. The product formed is found in the intestines and stored in the liver. Macrocytic anemia will result if there is a disturbance of any of the factors concerned in this process.

Obstruction of the small intestine, infestation with tapeworm, celiac disease, gastrocolic fistula, sprue and experimental cirrhosis of the liver have all been observed in association with macrocytic anemia.

ANEMIA OF PREGNANCY: Hypochromic microcytic type, the most common type, is found directly attributable to the gravid state, yields to iron therapy and the patient recovers automatically after the termination of pregnancy.

The macrocytic type is much less common. Wintrobe and Shumacker believe that diet and defects in gastric secretion are largely responsible but suggest that the demands of fetal hemopoiesis may place an excessive drain on the maternal supply of the hepatic principle essential for normal maturation of erythrocytes. Strauss finds that the larger doses of liver both orally and parenterally, are needed.

ANEMIA ASSOCIATED WITH OTHER DISEASE ENTITIES: Hemolytic Jaundice—A number of reports are reviewed, several recording experiences in one or more cases.

Interest continues to center about the mechanism of recovery following splenectomy. Doan, Curtis and Wiseman suggest as follows: "disgorgement of the sequestered blood cells from the splenic reservoir and sudden elimination of the destructive activity of the splenic phagocytes and hyperactive hemopoiesis. The spleen is considered as the major pathological agent in congenital hemolytic jaundice. Splenectomy is indicated as a prophylactic measure against clinical exacerbations of

excessive hemolytic activity in the chronic and subacute manifestations of the disease as well as in acute hemoclastic crises, whether spontaneous or precipitated, and regardless of the severity of the anemia."

APLASTIC ANEMIA: There is confusion concerning the use of the term aplastic anemia, some referring to a selective decrease in the number of red cells and others to a panmyelophthisis, whereas in several cases reference is made to aplastic anemia during the course of aleukemic leukemia. Literature contains reports of cases associated with abdominal lymphogranuloma, ankylostomiasis and arsphenamine, neoarsphenamine, benzene, acetarsone poisoning and also during the course of treatment of tuberculosis with gold compounds and after radiotherapy.

CANCER: "The blood picture associated with cancer is neither pathognomonic nor constant, nor does the anemia associated with cancer give any indication of the site of the malignant process. The anemia may be macrocytic or microcytic, and the color index, high or low. Usually there is leukocytosis."

INFECTION: "A disturbance in the balance between the production and the destruction of the red blood cells may be caused by infection. Usually secondary anemia results.—In following the course of an infection it appears that more information can be obtained by determining such changes in the cytoplasm of the white blood cells as vacuolation, toxic granulation and the presence of a bluish or grayish color of the cytoplasm than by noting the number of lobes or filaments of the nuclei."

ENDOCRINE DISTURBANCES: There is divergence of opinion concerning the specific changes of blood associated with hyperthyroidism. The anemia of myxedema may be the direct result of dysfunction of the thyroid gland or may exist as an independent condition. Both macrocytic and microcytic types are reported.

IRON DEFICIENCY ANEMIA: Davidson, Fullerton and Campbell examined three thousand and five hundred persons, representing the poor of Aberdeen and found forty-one per cent of infants under two years of age, thirty-two per cent of children of preschool age, sixteen per cent of adolescent women and forty-five per cent of adult women to have abnormally low hemoglobin and erythrocyte values. Anemia was not found in adolescent and adult males except in association with organic disease. "The prevalence of anemia in early childhood has been generally attributed to the low iron content of the usual infant diet coupled with the demand occasioned by rapid growth. These, undoubtedly, are important factors, but, as in the case of adults, diminished gastric secretion of hydrochloric acid may play an important role in causing nutritional anemia." The value of copper in the treatment has not been conclusively established.

Idiopathic hypochromic anemia, as a distinct clinical entity, has, during the past year, received less attention than formerly. It is now generally grouped with the hypochromic and microcytic anemias prevalent in middle-aged women, which are due to a variety of factors, including dietary defect, lack of hydrochloric acid in the stomach, menorrhagia and repeated pregnancy.

The possible influence of dietary deficiencies other than deficiency of iron in causing anemia or in retarding regeneration of the blood has been emphasized by Sturgis and Farrar, by Baker and particularly by Minot. Minot has also suggested that iron may be of benefit other than as simply supplying a deficiency. In this connection it is of interest that a group of French investigators have

reported benefit from the use of iron in treatment of patients suffering with lassitude, digestive disorders and glossitis, even though such patients had no anemia. They have observed, after iron medication, restoration of the papillae of the tongue and, in one case in which gastroscopy was done before and after treatment, correction of the gastric mucosa.

By C. E. BRADLEY, M.D.

Abdominal Puncture in the Diagnosis of Peritonitis in Childhood. Bernard S. Denzer, M.D., New York, N. Y. *The Journal of Pediatrics*, Volume 8, Number 6, June, 1936.

The author presents a series of cases selected from his practice over a period of fifteen years as examples of the importance of abdominal puncture in clarifying the diagnosis in numerous cases of obscure or indefinite gastro-intestinal or even apparently respiratory distress.

Dr. Denzer finally adapted the technic proposed by Newhof and Cohen in 1926 to his pediatric practice. A two-inch, twenty-bore, spinal puncture needle, with stylet intact, is inserted obliquely through the abdominal wall, then more perpendicularly, until the relief of pressure indicates entry into the abdominal cavity. A small syringe is attached and held parallel to the body to insure contact with the peritoneal mucosa around which a small film of exudate is formed even when minute amounts of fluid are present.

Although it is desirable to examine the fluid obtained from the abdominal tap by smear and also by culture, a good smear, carefully examined, is the most important part of the procedure.

Negative taps occur in all normal children. However, a negative tap does not contra-indicate operation when other factors do indicate appendiceal peritonitis.

In general, abdominal tap in cases of appendicitis will yield: (1) negative tap; (2) positive tap without organisms on the smear, and on culture either no growth, or growth of colon bacilli or colon bacilli with cocci; or (3) a pure culture of streptococci, which is very rare.

In marasmus or rickets fluid is sometimes obtained. It is clear or mucoid and contains predominantly lymphoid and endothelial cells.

The type of primary focus responsible for peritonitic exudate governs the type of peritonitis, and the evaluation of the abdominal tap, as well as subsequent procedures. That is, peritonitis following a thrombophlebitis may have a different course and will require different treatment from peritonitis secondary to pharyngeal angina. The author cites a case in which removal of a thrombus from the jugular vein resulted in complete recovery from a non-bacterial peritonitis.

Pneumococcus peritonitis, though radically different in pathogenesis from peritonitis of streptococcus origin presents similar therapeutic and diagnostic problems.

It is in streptococci peritonitis in children that abdominal puncture is most valuable, and the author believes that the use of this procedure in all cases of abdominal distention and in cases in which the diagnosis hovers around pneumonia, appendicitis, and peritonitis would result in the discovery that streptococcus peritonitis is more common than it is generally supposed, and that this early recognition of the entity would definitely reduce the mortality rate.

The following case illustrates the application of Dr. Denzer's procedure:

A female child, six years of age, one week previous to examination had had a temperature of 105 F. which subsided in forty-eight hours. When the child was examined she had a violently red throat, and a high temperature. The following day she complained of vague abdominal tenderness, and in another twenty-four hours vomiting, severe abdominal tenderness and distension had appeared. An x-ray of her chest was negative, and an abdominal puncture revealed gram positive cocci in chains. Intravenous dip was instituted. Two days later, the abdomen had become markedly distended and respiration was embarrassed. Operation was advised to relieve the child of the unsupportable burden of accumulated abdominal fluid. You will notice that the operation was not performed primarily to drain the abdominal cavity, but to relieve respirator embarrassment and reduce the degree of toxic absorption. Moreover, the operation was not an exploratory laparotomy in the ordinary sense of the term.

Incisions were made in both flanks and tubes inserted. Fluid gushed from one side and continued to drain for weeks, while only a small amount of fluid exuded from the other side for about a week. Pneumonitis, empyema, and kidney infection followed and were treated. Transfusions and infusions of normal saline were the main forms of supportive therapy. Complete cure took place.

Since it is generally agreed that surgical interference is contra-indicated in pneumococcal and streptococcal peritonitis the importance of abdominal tap cannot be overestimated as a means of distinguishing between these forms and appendiceal peritonitis which very rarely yields an abundance of gram positive cocci in chains alone from the puncture.

Probably this procedure is not included in recent texts because of the persistence of the belief that there is danger of puncture of the viscera. The author has pointed out the extreme difficulty with which this could be done, and urges the more widespread acceptance of the procedure, because of its safety and its value as a diagnostic aid.

Indications for Urologic Investigation in Children. Meredith F. Campbell, M.D., New York, N. Y.

Undoubtedly the importance of urologic examination in children is underestimated. Urologic disease is not uncommon in children, (with the exception of neoplasm of the lower urinary tract they are subject to the same diseases as adults), and is concerned chiefly with the pathology of anomalous developments of the urinary tract which is often difficult to diagnose.

Pyuria: When urinary infections, indicated by the presence of six pus cells per high dry field in an uncentrifuged urine specimen which has been aseptically collected, persists for a month; its source should be investigated. A urinary antiseptic should be liberally administered as well as general supportive measures to build up the general nutrition and health of the child during this period. All focal infections should be eliminated if possible.

If pyuria is cleared with methamine therapy, which the author discusses in some detail, it is safe to suppose that no serious obstruction is present. However, if the cure is achieved by means of a ketogenic diet (which is about sixty per cent successful even in cases of severe anomalous obstructions), the child is entitled to a thorough urologic examination.

Among the more common causes of chronic

pyuria are obstruction in the urethra, urinary stone, tumor, tuberculosis, vesical diverticulum, and neuromuscular disease of the urinary tract.

Persistent Acute Urinary Infection: When acute urinary infection, pyelitis, persists for more than five days under treatment, a complete urologic examination is indicated. Infected hydronephrosis will most often be discovered although parenchymal suppuration may exist as a renal or perirenal carbuncle or diffuse focal suppurative nephritis.

Disturbances of Urination: Frequency and difficulty of voiding and incontinence are commonest disturbances of urination in the young. Irritation of the bladder or posterior urethra even in the presence of infection is usually the cause of urinary frequency. It may also be caused by obstruction along the lower urinary tract, by vesical stone, or by a reflex from a lesion of the kidney or urethra.

"Urinary difficulty is caused by obstruction at or peripheral to the bladder outlet or by neuromuscular vesicle dysfunction. Dysuria is most often produced by the congenital contracture of the vesical outlet, cord bladder, congenital post-urethral valves, congenital hypertrophy of the verumontanum, or urethral stricture, notably at the meatus."

Urinary incontinence may be due to vesical paralysis, ectopic urethral orifice or in certain types of epispadias, for example; and false or paradoxical when present as an overflow in intravesical obstruction. Certainly when medical, psycho- and physio-therapy have failed to bring relief of enuresis by the time a child is four years of age, urologic examination should be made, and often strange lesions will be found.

Pain: Pain or dull ache in the loin of a child, urethral colic (simulating enteric colic with the exception that the pain is intermittent, and the diarrhea absent), and pain on urination are indications for urologic examination even though the urinalysis is negative. Such pain may be due to urethral kink, congenital diverticulum, deep urethral obstruction, severe urethrovesical infection, vesical calculus, renal tuberculosis or ulcerated meatus.

Tumor: Congenital hydronephrosis, embryonal adenomy-sarcoma of the kidney (so-called Wilms tumor), mobile solitary kidney, neuroblastoma of the adrenal are some of the tumors most frequently encountered and they can be identified and differentiated by urologic examination only.

The diagnosis of hydronephrosis, renal neoplasm, adrenal tumor, or perirenal abscess must usually be determined by urethral catheterization and pyelography.

Hematuria: Children with hematuria, not due to hemorrhagic nephritis should be given a thorough urologic examination, because the wide range of possible diagnoses makes an accurate diagnosis impossible without it.

Although a complete urologic examination is not indicated in chronic interstitial nephritis, an excretory urographic examination is often invaluable, because children presenting the symptoms of this entity have been found to be suffering from obstructions of various types.

Last but not least, the author presents data from the examination of six hundred children showing that the reactions of children to urologic examinations are much less severe and occur less than half as often as they do in adults, and that they certainly should not be considered when a urologic examination is indicated.

EYE, EAR, NOSE AND THROAT

Edited by Marvin D. Henley, M.D.
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Iridocorneosclerectomy for Glaucoma. Conrad Berens, M.D., New York. American Journal of Ophthalmology, June, 1936.

In the foreword the author explains that the ideal operation for glaucoma has yet to be found and that the procedures discussed in this paper are a combination of the best features of the Lagrange (the Lagrange iridosclerectomy, the broad filtering scar and complete basal iridectomy), Elliot (the Elliot trephine operation, the excision of part of the cornea which tends to maintain filtration), and Holth (the Holth punch operation, a ragged wound which favors filtration) methods with the addition of the excision of tissue in the angles of the wound and the complete closure of the conjunctival wound over a bleb of salt solution. He seeks to obtain a broad, evenly diffused, linear, filtering cicatrix.

Iridocorneosclerectomy has given relief in many types of increased intraocular pressure and has proven successful in chronic, primary, noncongestive glaucoma. The procedure may be used in practically all forms of acute and chronic glaucoma, whether primary or secondary. Some of the contra-indications are: buphthalmos with a thin sclera; when newly formed vessels may be seen on the iris; patients with advanced arteriosclerosis and unusually high blood pressure; and in the presence of extensive peripheral synechiae. The instruments and sutures used are illustrated. The technique is given step by step with drawings to clarify the procedure.

The reasons for departing from the original Lagrange technique were the late infections due to the formation of a fistulous cicatrix resulting from the Lagrange iridosclerectomy if the wound filtered well and the failure to obtain filtration in many cases when the scleral excision was not extensive.

Some of the advantages of this operation listed by the author are: an easier dissection because of the absence of blood and the thicker tissues; better lateral filtration; an easier use of the punch with a less tendency for the wound to heal; the scleral incision is straighter because of the special keratome used; the running suture used and the crushed edges of the incision facilitate the closing of the wound which is also aided by doing away with the dressing; and the filtration is aided by the subconjunctival irrigation and the ballooning of the tissue with half-normal physiologic saline solution.

A table is given showing the results following iridocorneosclerectomy in seventy-three operations on fifty patients (sixty-eight eyes). The duration of observation of these cases ranged from four months to eleven years. Eighty six and six-tenths per cent of the thirty-eight unselected eyes with primary glaucoma were successful as were 73.1 per cent of the twenty-six eyes with secondary glaucoma and seventy-five per cent of the four eyes with acute glaucoma.

Some of the complications encountered were: extrusion of the lens through the wound in a patient with microphthalmos, incipient cataract and glaucoma; the rupture of the thin filtering bleb three times (probably due to the fact that the incision was made with a Graefe knife; varying degrees of iritis; hemorrhages which occurred at the

time of operation or later; and injury to the lens in a patient with an incomplete iridectomy.

A history of iridosclerectomy operations is given dating from the first iridectomy by von Graefe in 1885 up to the present time.

Primary Tuberculosis of the Conjunctiva. A Samuelson, M.D., Stockholm, Sweden. *Archives of Ophthalmology*, June, 1936.

During the past twenty years there have been only three cases at the ophthalmologic clinic of the Seraphimer Hospital. Two cases occurred during the past year. The author uses the word primary indicating that it was not possible by means known today to demonstrate tuberculosis elsewhere in the body. Secondary tuberculosis of the conjunctiva is uncommon, but the primary condition manifested here by ulcer of the conjunctiva and swelling of the regional lymph nodes in its inception is most uncommon.

Some authorities maintain that even when tuberculosis is present elsewhere in the body that the infection of the conjunctiva is a primary ectogenous infection. It would then be called a superinfection. If it was endogenous it would be spread by the vascular system or per continuitatem and the regional lymph nodes are then not swollen or tender. Another means of differentiating the primary from the secondary is the tuberculin tests. The author states that there is a possibility with these tests of making them so soon after the original manifestation of tuberculosis that a negative result is obtained because of the fact that the body has not had time to become allergic. He says that this pre-allergic negative state may vary from three to seven weeks.

The symptoms of this disease appear slowly and with no great degree of discomfort to the patient. The opinion of several authorities is given in regard to the age at which this disease has its greatest incidence. Twenty years seemed to be the limit on the age for quite some time until Berro and Eyre reported up to thirty years of age. The author's third case was a woman, age twenty-eight years. It is generally agreed however that the incidence is less each year, particularly after the third decade. Not uncommonly trauma is associated with this infection and the circumstances are such that tuberculosis may not occur to the attending physician until later when it fails to heal.

In the three cases reported by the author there was no history of trauma or injury of any kind, nor were they able to locate the source of the infection. Ulcers, granulations or proliferations of the conjunctiva characterize tuberculosis of the conjunctiva. When the tubercle bacilli have been found (about one-fourth of the cases), they have been present in the lymph nodes as frequently as in the conjunctiva. Often the swelling in front of the ear is the first symptom noticed by the patient. The results were favorable in the three cases reported.

Formerly the prognosis was very grave, but due to improved methods (Finsen) of treatment much better results have been obtained. Formerly an eye showing these symptoms was diagnosed as Parinaud's conjunctivitis of an unknown etiology. An eye showing these manifestations (Parinaud's syndrome) is now considered as belonging to a group of diseases the etiology of which is still unknown. In the order of frequency the diseases mentioned in which Parinaud's syndrome appear are tuberculosis, syphilis, tularemia and the fungous diseases, leptotrichosis and sporotrichosis. In addition to the Finsen treatment, x-ray for the

lymphomas and treatment of a general roborant nature was favorably used.

Three cases are reported with accompanying photographs and photomicrographs.

Neurological Aspects of Frontal Lobe Abscess. Dr. Charles E. Connor, St. Paul, Minn. *The Laryngoscope*, May, 1936.

Gerber said: "the common symptoms of frontal lobe abscess is its absence of symptoms."

The records of twenty-five local hospitals were searched and twenty cases of frontal abscess found. A search of American and English literature was made for reports on frontal lobe abscess. The abscess had to have been definitely proven as a solitary one by operation or postmortem. Two hundred four such cases were found.

This paper consists of a critical review of these cases in regard to the neurological signs and symptoms found. The paper is a lengthy one of thirty-nine pages under the following headings: A. General discussion. B. Cranial nerves to extrinsic ocular muscles. C. Cranial nerves and sympathetic system to intrinsic ocular muscles. D. Optic nerve. E. Pyramidal tract. F. Motor cranial nerves not elsewhere discussed. G. Sensory disturbances. H. Reflexes. I. Aphasia. J. Psychic changes.

His closing remarks are: The results of an analysis of neurological symptoms noted in two hundred and four cases of solitary abscess of the frontal lobe may be summarized as follows:

A: Neurological symptoms of frontal lobe abscess may be divided into two groups. In one group, composed of symptoms indicative only of increased intracranial pressure and, therefore, without localizing value, are bilateral and generalized manifestations; in the other group are symptoms caused by involvement of centres and tracts in or near the frontal lobe, neighborhood symptoms which have, therefore, some lateralizing and localizing value. Most unilateral and localized manifestations belong in this group.

In the first group are included the following ocular lesions, all bilateral: paralysis of extrinsic muscles, pupillary changes, visual impairment, and retinal, disc and field changes.

Also included in this group are bilateral and generalized twitchings, convulsions and paralyses.

Most reflexes, both superficial and deep, belong in this group; psychic and mental changes are also included.

In the second group, composed of symptoms which may have some lateralizing or localizing value, are unilateral lesions of extrinsic ocular muscles, conjugate deviation of the eyes, unilateral lesions of extrinsic ocular muscles, conjugate deviation of the eyes, unilateral pupillary changes, unilateral disturbances in vision, retina, optic nerve and visual field.

Unilateral or localized twitching, spasm or paresis is of value; Jacksonian attacks, especially when associated with aphasia, may be of definite localizing value, as may hemiparesis and hemiplegia.

Unilateral reflexes, especially when persistently or repeatedly present, are of value in suggesting the side of the lesion.

Aphasia, especially when associated with Jacksonian attacks, has definite localizing value.

B: Symptoms of frontal lobe abscess may be ipsilateral, contralateral or bilateral.

Unilateral symptoms occurred more frequently on the side of the cerebral abscess than on the

side opposite the abscess; they are, therefore, of some lateralizing value.

The frequent occurrence of unilateral symptoms on the side opposite the cerebral abscess limits their lateralizing and localizing value and necessitates caution in their interpretation.

Bilateral or generalized symptoms are indicative only of increased intracranial pressure.

His conclusions are:

1. There is no neurological picture which is pathognomonic of frontal lobe abscess.
2. Neurological signs occur in frontal lobe abscess with sufficient frequency and possess sufficient localizing value to be of definite and, at times, considerable assistance, not only in making the diagnosis but also in localizing the lesion.

An extensive bibliography and a number of tables accompany the paper.

Hemangioma of the Nasal Septum. I. F. Weidlein, M.D., Cleveland. Archives of Otolaryngology, June, 1936.

Hemangioma, papilloma, carcinoma, fibroma, polyp, tuberculoma and rhinoscleroma are the common forms of granuloma which come from the nasal septum.

It is of vital importance that the correct diagnosis be made in order that suitable treatment be instigated and not some treatment that might aggravate the already existing grave condition. Excluding infection and trauma as etiological factors, any other granuloma of the nasal septum is usually considered as malignant because of its free bleeding when touched. The importance of finding the point of attachment of the mass is stressed. This is hard to do usually because of the position of the mass and the bleeding attending the examination. A microscopic examination of the tissue is also necessary. These arise from the cartilaginous vomer junction or from the cartilage itself and more than likely from embryonic rests instead of stimulation of healthy septal tissues. The author classifies these hemangiomas into angioma cavernosum and angioma simplex.

Instances are cited of the removal of a bleeding tumor by Rosenthal from the right anterior inferior corner of the septum with a cold snare which left a smooth cartilage behind; of Dabney removing a large cauliflower growth which was attached just posterior to the nasolabial margin with a Luc forceps and cauterization three times with tri-chloroacetic acid and the remains being removed with a snare; of Callison reporting a case of bilateral polypoid hemangioma consisting of pedunculated dark red excrescences varying in size from that of a pea down, which occurred at the junction of the crest of the vomer and the triangular cartilage bilaterally; of Tilley removing a "large angioma" which occurred in seven months so that it protruded from the nostril and bled freely and which was then removed with its pedicle attachment to the septal cartilage.

The four forms of treatment are: cauterization, use of radium, electrodesiccation and excision. The author favors excision because of the fact that then all factors are under control. The base and underlying cartilage should be removed along with the tumor itself. If this is not done the cartilage usually dies and produces a slough if there has been much denudation.

He reports three cases: a white man of twenty-six; a white man of fifty-two; and a white woman of thirty. In all three cases excision was done and there has been no recurrence.

SURGERY AND GYNECOLOGY

Abstracts, Reviews and Comments from
LeRoy Long Clinic
714 Medical Arts Building, Oklahoma City

Two Stage Amputation for Diabetic Gangrene of Leg. By Edward T. Crossman, M.D., Chief, Surgical Service "A," Episcopal Hospital, Philadelphia, Pa. American Journal of Surgery, July, 1936.

A two stage amputation for diabetic gangrene of leg is recommended because statistics show that there is a high post-operative mortality in the case of the average patient following amputation of an ordinary character.

The author makes this statement:

"The amputation in these patients has for its object the exclusion of infected and toxic material." He believes that this can be best accomplished by a two stage procedure.

The article indicates that the author is of the opinion that disaster follows in a large percentage of patients when a one stage operation, with flaps and immediate closure, is done. For example, in a group representing fifty-six such operations at Episcopal Hospital, there was a mortality of nearly fifty per cent. The author agrees that the mortality in the case of nine of the patients might have been attributable to improper and inadequate preparation, but leaving out these there was a mortality of thirty-eight per cent in the remainder.

Particular reference is made to the necessity of preserving the blood supply, and in that connection the statement is made that in the average one stage operation there is "dissection of one layer of tissue from another at the expense of some blood supply, since vessels passing from deeper to superficial structures are divided in the maneuver."

With these arguments as a foundation, the author makes this significant statement: "The greatest assurance for the life of the patient can be secured by the guillotine or Einschnitt operation." He believes that the incision should divide all the tissues at one level. He does not believe that any attempt at all should be made to fashion flaps, because in that way the blood supply suffers. After the primary steps in which the guillotine operation is performed, there is a lapse of several weeks during which time the wound is dressed once a week with cod liver oil until it is clean enough to secure information from bacterial counts, then the dressings are done about every other day. When only two or three bacteria are found in a high power field, the secondary plastic operation for the formation of a serviceable and sound stump is done.

COMMENTS: In this article there is a very strong argument in favor of a two step procedure, but the argument is apparently based, in the main, upon the disasters that follow the ordinary amputation with the formation of skin flaps and tight suturing. We are convinced that, in that particular, the reasoning of the author is sound. However, we have usually been able to secure very satisfactory results following a complete one step procedure. In doing the operation we have abandoned the formation of skin flaps. A vertical incision is made on each side of the limb in such a way that inter-muscular spaces can be entered, after first having made a circular incision at the point of amputation through all the tissues down to the bone, or bones. The muscular masses are gently separated from the bone to a point three or four inches

above the circular incision. We have found that if this is done with care and circumspection there will be but little bleeding. The bone is divided three or four inches above the circular incision, the muscular masses brought together with a few sutures here and there. The space is drained by rubber tubing. A tourniquet is not employed. The vessels are ligated where they are divided at the point of the circular incision. A large gauze dressing is employed, and the stump kept immobilized by the application of splints. LeRoy Long.

The Progesterone Treatment for Dysmenorrhea.
By C. A. Elden and K. M. Wilson, Rochester, N. Y. *American Journal of Obstetrics and Gynecology*, July, 1936, page 91.

The rationale for the treatment is reviewed, the case histories briefly given. In discussing the causes of dysmenorrhea these authors emphasize the fact that estrin alone is not the sole factor in the causation of dysmenorrhea.

Their conclusions from this brief study follow:
"Seventeen selected patients with dysmenorrhea were treated with progesterone. Forty-seven per cent obtained complete relief, 11.7 per cent claimed partial relief, and 41.3 per cent received no relief. The doses varied from 2/25 to 1 Rb. U. given in single or divided doses three to six days before the onset of the menstrual flow. The possible mechanism is discussed. There was some relief of constitutional symptoms in some cases. This was not a constant finding. There was no delay in the onset of the menstrual flow nor any change in the character or duration of the period caused by the small doses of the hormone."

* * *

The Use of Progesterone in Combating Habitual Abortion. By Howard F. Kane, Washington, D. C. *American Journal of Obstetrics and Gynecology*, July, 1936, page 110.

The summary of this article as given by the author follows:

"1. In forty cases of repeated spontaneous abortion treated by progesterone and thyroid extract, thirty-six living children were born.

"2. Pure progesterone seems to be more effective than the extract of the corpus luteum.

"3. The fact that a pregnancy has been successfully completed does not obviate the necessity for treatment in subsequent pregnancies.

"4. The incidence of fetal abnormality is high among women who bear children after having previously aborted.

"5. Endocrinologic investigation of women who bear defective children may be the means of discovering the cause and providing a method of eliminating this complication of pregnancy."

* * *

The Effects of Progestin on Afterpains. By Samuel Lubin and Frank J. Clarke, Brooklyn, N. Y. *American Journal of Obstetrics and Gynecology*, July, 1936, page 134.

This study was made on fifty-five puerperal women with a corresponding number of "controls." They report complete relief of after pains in 87.1 per cent by the administration of a single dose (one rabbit unit) of progestin. They observe that the normal processes of the puerperium are unaffected.

COMMENT: This is an interesting series of articles concerning the employment of more refined progestinal extracts. The effectiveness of employment of progestin in all of these conditions, dysmenorrhea, habitual abortion, and after pains,

rests upon the fact that uterine motility is reduced by the use of progestin. There is no question but that the refinement of progestinal extract will be of invaluable aid in the practical therapeutics. However, individualization of patients will remain a necessary requirement for good results, as many will have other factors at play in the causation of symptoms.

Wendell Long.

Cyclical Changes in the Human Vaginal Mucosa.
By Herbert F. Traut, Paul W. Bloch and Alberta Kuder. *From Surgery, Gynecology and Obstetrics*, July, 1936.

The mucosa of the fundus of the uterus and that of the tubes have such definite cellular response to the pituitary and ovarian cycles that one is able to diagnose from them the status of structures in the ovary with a great degree of certainty. The authors feel that it is logical to assume, therefore, that other portions of the Muellierian duct and vagina might show evidence of rhythmic histological change in an analogous manner.

This study of the human vaginal mucosa was based upon specimens taken from twenty-nine normally menstruating women who had no gynecological or endocrine condition as far as could be ascertained. In twelve it was possible to secure four or more vaginal biopsies at weekly intervals so that in them a complete menstrual cycle was represented. All biopsies were taken at the same level of the vagina.

It was found impossible to base the study of the "vaginal cycle" on the variations of the superficial zones of the vaginal epithelium. The authors feel that these zones are influenced by any one of several extraneous factors, such as coitus, the douche, etc.

"We conclude that there may be rhythmic exfoliation of the superficials. Indeed, it would seem highly probable that this should occur in association with the periodic proliferative activity of the basal layer; however, we have not succeeded in demonstrating this sort of response."

The conclusions drawn by the authors in their study are:

"1. In the histological variations of the human vaginal mucosa, there is a definite rhythm which it is possible to correlate with menstruation and hence with the ovarian cycle.

"2. This cellular response is characterized by proliferation on the part of the stratum germinativum with increase in the number of young epithelial cells in the basophilic zone of the epithelium. This response is associated with occasional mitoses and very definite leucocytosis and hyperemia.

"3. The proliferative phase appears in the premenstruum, lasts six or seven days and is either completed premenstrually or extends into the menstrual phase and occasionally into the postmenstruum. It has not been observed between the seventh and twenty-first days of the cycle. Between the proliferative phases the epithelium is quiescent.

"4. Such alternation between proliferative and inactive phases has not been demonstrable by us in pregnancy, which seems to indicate that the rhythm of the vagina is related to the ovarian cycle.

"5. We have been unable to correlate changes in the superficial and intra-epithelial layers of the vaginal mucosa with the menstrual cycle. According to our observations they are quite arrhythmic."

COMMENT: Studies of this sort are the basis for the practical application of principles of diag-

nosis and treatment, because it is in this way that variations in structure are proven to have a definite relationship to variations in function in this organ and in the related organs.

Wendell Long.

A Clinical Study of the Effect of Camphor-in-Oil on Lactation. By Milton D. Klein, New York, N. Y. *American Journal of Obstetrics and Gynecology*, page 894.

Ninety out of one thousand postpartum cases were studied regarding the effect of camphor-in-oil on the breasts at various periods following delivery. When given within twenty-four hours after delivery, eighty per cent of the patients failed to develop engorgement. Given after twenty-four hours and before engorgement developed beyond the first degree stage, inhibition took effect within six hours and the breast returned to the normal state shortly thereafter.

"When the breasts exhibited a second degree reaction before treatment was instituted, the use of camphor-in-oil prevented extension of engorgement to the third degree stage. When camphor-in-oil was given after the breasts reached the second or third degree reaction, the duration of breast engorgement was shortened to twelve hours instead of thirty-six hours. Furthermore, regression to the nonlactating phase was complete within two to three days instead of the usual four or five days. It is therefore evident that the earlier the injections are started, the less the degree and duration of the engorgement, and the quicker the breasts return to their dry state.

Since the writing of this paper, fifty additional patients have been given larger doses of camphor-in-oil (three gr. twice during first day) with results that seem to be more effective in prevention of lactation.

CONCLUSIONS

1. Intramuscular camphor-in-oil is an effective method of treatment for relief of breast engorgement.
2. Camphor-in-oil given intramuscularly was found to inhibit lactation.
3. The sooner the injections are started postpartum, the more effective is the action.
4. No marked general or local reactions followed.
5. The advantages of this method over binders, catharsis, sedation and restriction of fluid intake, are that it is more effective, simpler and less disturbing to the patient."

The procedure followed was that advocated by McNeile.

"Two doses of camphor-in-oil, 1½ gr. each, were given intramuscularly (into the buttocks) the first day (in morning and afternoon). One injection of 1½ gr. was then given daily for three successive days, making the total number of injections five. The use of cathartics, ice bags, binders, and restriction of fluids were avoided except in the few cases where it was obvious that therapy failed. All breasts were examined every twelve hours for the first forty-eight hours, every six hours for two days and daily thereafter."

Wendell Long.

The Anterior Pituitary-Like Hormone. (A Clinical Study of Its Effects in Acne Vulgaris.) By Charles H. Lawrence, Boston, Mass. *The Journal of the American Medical Association*, March 21, 1936, page 983.

This paper comprises a study of the effects of pregnancy urine extract on acne vulgaris.

Thirty patients, ten males and twenty females, were treated by injections of two cc. of Antuitrin-S every other day.

Of the twenty females only eight had noticed a relationship of the acne to menstruation. Fourteen of the females had disturbances of menstruation in rhythm, duration or amount of flow, or definite dysmenorrhea. Oligomenorrhea was encountered frequently.

In the patients in whom there was co-existing menstrual disturbance and acne, improvement in both acne and menstruation progressed in equal measure.

The duration and amount of treatment necessary to produce good results varied greatly in different patients. The average dosage in the series was 3,360 rat units, with the maximum 7,700 rat units in a patient fifteen years of age. The minimum was 300 rat units in a patient thirty years of age.

In the majority of patients improvement was apparent in from two to four weeks and maximum benefit was obtained in from twelve to sixteen weeks. No difference was apparent between the two sexes as regards to response to treatment.

Ten patients were regarded as cured since their acne had not re-appeared after two months without treatment. Eleven were much improved, showing only an occasional papule and seven showed only moderate improvement owing partly to as yet insufficient treatment.

These authors feel that further study is needed to determine the exact nature of the endocrine imbalance existing in patients with acne vulgaris.

COMMENTS: There is abundant evidence indicating an endocrine imbalance as an important etiological factor in acne vulgaris. The influence of potent glandular therapeutic products upon acne has been noticed with increasing frequency during the last five years when potent glandular extract has been available.

In the first place it was interesting to note the fact that acne was more pronounced when large doses of estrogenic substances were employed. In my experience this was particularly true of Theelol.

Antuitrin-S and the like products have been most effective in the treatment of acne, but in my experience their effectiveness has been limited to those young women who had menstrual disturbances or other evidence of glandular imbalance. In other words, it is not yet certain that Antuitrin-S is either wise or efficacious as a form of treatment in all cases, but it is more probably true that it is wise and efficacious in a selected group of patients who have other symptoms and signs of glandular imbalance.

Wendell Long.

Passive Vascular Exercise: Observations on Its Value in Treatment of Peripheral Vascular Diseases

Harwell Wilson and Norman W. Roome, Chicago (*Journal A. M. A.*, May 30, 1936), employed passive vascular exercise in the treatment of twenty-three cases of peripheral vascular disease. Twelve cases were diagnosed arteriosclerosis; five of these were subjectively somewhat improved but there was little or no permanent change in the objective manifestations. One patient's complaints were relieved and the appearance of the foot definitely improved, although the fact that this patient was given only eighteen and one-half hours of treatment makes it doubtful whether the passive vascular exercise was responsible for the result. Six cases showed no change. There were eight

cases of thrombo-angitis obliterans; of these two showed a slight decrease in the intermittent claudication and six showed no change. Three patients with embolism were treated. Two died as a result of the heart disease that had given rise to the embolus. The third recovered but it is doubtful whether or not this was due to either the positive and negative pressure or to the papaverine treatments that were administered. Many of these patients felt improved during the course of the treatment but reported no permanent beneficial results when questioned two or more months later. This is evidence of the lack of permanent benefit from the treatment and may indicate a considerable psychologic factor. In this series of cases passive vascular exercise treatment did little good, and it was difficult to say whether the beneficial results that followed were to be attributed to it or to the other measures that were concurrently employed.

The Therapy of the Cook County Hospital

Bernard Fantus, Chicago, in collaboration with Theodore Cornbleet (Journal A. M. A., June 20, 1936), presents the therapy of pruritus, which incorporates the views of the attending staff of the Cook County Hospital. It is stated that from a practical point of view it is not so much the mode of therapeutic attack as the point of attack that might be employed in the classification of available means of treatment: (1) local measures, (2) systemic measures. When local measures suffice, general measures are not required; and, the less efficient the local treatment, the more are systemic measures required. In general pruritus, systemic treatment is likely to be of greater importance than local therapy and in localized pruritus local treatment is of the greater importance. Often, these two points of attack are usefully combined. Some of the therapeutic measures discussed are lessening the blood supply to the skin, soothing the nerve endings, softening the epidermis, depression of the sensory nerves, destruction of cellular infiltrate by radiation therapy, modification of sweat secretion, modification of the blood supply and influencing the central nervous system. A number of prescriptions for external and internal use are given.

Tuberculosis of Clavicle: Review of Literature and Report of Case

Jacob Sirkin and E. A. Baumgartner, Newark, N. J. (Journal A. M. A., July 11, 1936), encountered a patient who developed a tumor over the right clavicle and was found to have tuberculosis of the clavicle. Apparently developing later, at least with symptoms occurring after this, the right kidney was involved and removed. Roentgen examination showed a lesion diagnosed tuberculosis of the sacro-iliac joint by the roentgenologist. The diseased clavicle was curetted and is now healing. Tubercle bacilli were found in the pus removed by needle from the clavicular tumor and injected into guinea-pigs, which developed the typical lesions. Twenty-nine cases of tuberculosis of the clavicle described in the literature showed that this disease occurs in the young adult of either sex and that thorough curetting or excision cures the condition. In one case sunlight, with no other treatment, also apparently effected a cure. It is proved that there is no special handicap in complete removal of the diseased clavicle for, if the periosteum is not destroyed, new bone develops. Bone transplantation has been done successfully. The question of a primary focus in the clavicle vexes here as in other bone tuberculosis. Though infrequently described, there appears to be no anatomic or

pathologic reason why primary clavicle involvement cannot occur. Trauma was associated with several of the cases reported; it was definitely not associated in some. Other foci of tuberculosis are described in eleven cases, involving other bones in four cases, while the lungs, glands of the neck, kidneys and breast were tuberculous in others.

Gonorrheal Vaginitis: Results of Treatment with Different Preparations and Amounts of Estrogenic Substance

In treating gonorrheal vaginitis, Robert M. Lewis, New Haven, Conn., and Eleanor L. Adler, New York (Journal A. M. A., June 13, 1936), found that estrogenic substance in ethylene glycol given hypodermically was relatively effective when used in large doses: 2,400 international units daily. Eight hundred international units daily proved disappointing. The use of vaginal estrogenic suppositories (originally 600 international units and later 1,000) proved very effective. Clinical improvement, cessation or great diminution of discharge is nearly always noted after from fourteen to eighteen days of treatment. The administration of estrogenic substance changes the reaction of the vaginal secretions from neutral or alkaline to acid. This, the authors believe, is the major factor in eliminating the gonococcal infection. The acidity of the vaginal secretions is easily measured and provides a sure guide by which one can determine whether or not dosage is adequate. Of thirty-three consecutive cases of gonorrheal vaginitis in children treated with estrogenic suppositories, thirty yielded negative smears in an average of 20.7 days. Two required twelve weeks of treatment. Five cases are listed as recurrences. No ill effects were encountered. The method is safe and harmless, and the most effective method known for the treatment of gonorrheal vaginitis in children.

Effect of Carotene and Vitamin A on Patients With Diabetes Mellitus: II. Effect of Daily Administration of Carotene on Blood Carotene of Normal and Diabetic Individuals

Elaine P. Ralli, Arthur C. Pariente, Harold Brandaleone and Sidney Davidson, New York (Journal A. M. A., June 6, 1936), observed the effect of the continued daily oral administration of 0.3 per cent carotene in oil on the blood carotene and cholesterol of a group of four normal and four diabetic persons. Following the administration of one cc. of the carotene solution to three normal subjects and to three diabetic patients, there was a greater increase in the blood carotene in the latter and a more gradual return to the fasting level after carotene was stopped. Following the administration of five cc. daily to one diabetic patient and to a normal subject whose blood carotene level had been elevated as a result of the previous administration of a large dose of carotene, there was a still greater increase in the blood carotene in the diabetic patient above that of the normal subject and clinical evidence of carotenemia appeared. The blood cholesterol was estimated in three normal subjects and three diabetic patients. This rose with the blood carotene in one diabetic patient and in two of the normal subjects. To explain this increase in blood carotene in diabetic patients, both before and after carotene administration, it is suggested that in the diabetic patients the ability of the liver to convert carotene to vitamin A is diminished, and that this results in an increased concentration of carotene in the liver, which interferes with the absorption of carotene from the blood.

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Fever Therapy in Ocular Manifestations of Syphilis*

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It is a well-known fact that syphilis is no respecter of any organ or tissue of the human body; that attribute applies equally to acquired and to congenital syphilis. We can then naturally assume that all structures of the eye and its adnexa may be the site of a leutic manifestation. The fact that syphilis affects the eye was recognized by Juan de Vigo as early as 1567.

Fever therapy for the cure of chronic ailments is not a new subject. The ancient Greek and Roman physicians observed that intercurrent fevers produce a favorable effect on chronic diseases. Hippocrates once said: "Give me the power to cause fever and I will cure all disease." Before the present era artificial fever therapy for the treatment of chronic ailments was produced by means of mineral hot baths and hot mud packs. In 1498 Lobos¹ concluded that in the later stages of syphilis the hot bath was the best form of treatment.

Through the centuries repeated references were made to the cases of general paresis that had been favorably affected by intercurrent fevers. However, fever therapy was not revived until 1918, when Wagner von Jauregg² introduced the successful treatment of general paresis by inoculation with tertian malarial parasites. In experimenting for means of producing

fever he had also used killed typhoid bacilli, peptone, etc. Since that time the induction of fever has been accepted as an extremely valuable measure in the treatment of these cases.

The fact that the malarial paroxysms acted so favorably on paralytic patients stimulated many investigators to attempt to produce an hyperpyrexia by other means, and to apply them to the treatment of such cases. In 1919 Weichbroat and Johnel³ demonstrated that rabbits with scrotal chancres recovered more rapidly when subjected to heat.

Shamberg and Hsien Wu Tseng⁴ studied the effects of hot baths on syphilitic rabbits. They noted considerable improvement in the lesions of those so treated. These results led them to use hot baths in the treatment of syphilis of the central nervous system in human beings. These investigators found that the oral temperature could be elevated to 106° F. without producing any ill effects on the patients, and with apparent improvement of the clinical manifestations. After considerable experimental study on animals and human beings, King and Cocke⁵ in 1930 introduced diathermy for the production of fever. This method proved to be equally effective in the treatment of paresis. The following year Black and Blakshare⁶ reported favorable results with the hot bath treatment of syphilis of the central nervous system.

During the past ten years the literature

*Much of the material in this discussion was presented in a thesis by the author published in the Transactions of the American Ophthalmological Society, 1934.

¹Read before the Eye, Ear, Nose and Throat Section, Annual Meeting, Oklahoma State Medical Association, Enid, April 8, 1936.

on the subject has been voluminous, and many variations of the methods have been introduced. All had a common object, the induction of fever. Regardless of whether it was induced by an active infection, as with malarial parasites; by foreign protein, as in the use of typhoid vaccine; physically, by means of cabinets of various kinds, diathermy or hot water baths—all investigators reported good results from the treatment. Consequently, it must be accepted that the treatment of syphilis of the central nervous system by hyperpyrexia is successful. With this in mind, it was believed that since the method was effective in the treatment of latent syphilis of the central nervous system, it should also be useful in the treatment of chronic and congenital syphilitic manifestations of the eye.

At the time we instituted the use of fever therapy, fever cabinets and diathermy had not been introduced, consequently we first resorted to inoculation with malarial parasites. We were very fortunate in obtaining a strain that was easily controlled. In most cases it was possible to terminate the paroxysms within twenty-four hours.

Most of this work on ocular syphilis was done at the Children's Mercy Hospital and the Kansas City General Hospital. Neither of these institutions have fever cabinets, consequently for our fever treatment we used the tertian malarial parasites and the hot bath for the production of hyperpyrexia. Some of these cases received treatment by both methods.

In this series, patients having interstitial keratitis, optic neuritis and primary and secondary optic atrophy were treated. A few cases were treated with intravenous typhoid vaccine but the results were not as good as in those which we used the malaria or the hot bath, so only the technique of those two methods will be discussed

TREATMENT WITH TERTIAN MALARIAL PARASITES

It is best first to obtain a mild strain of tertian malarial parasites. Take five cc. from the patient having the malaria and inject it immediately into the vein of the patient to be treated. It may take a week or ten days before the patient shows any sign of having malaria. Once the parox-

ysms have started, allow the patient to have about ten paroxysms. In case the patient shows developing debility it might be necessary to terminate the malaria before he has had ten bouts. In severe cases of syphilis in which the patient did not suffer much debility we allowed the patient to have as many as fifteen bouts. If you have a mild strain, five grains of quinine by mouth per day for five days usually suffices to rid the patient completely of malaria. In fact, in all our cases the patient had no paroxysms after being given the quinine for one day.

TREATMENT WITH HOT BATH

The hot bath treatment should be given preferably in the evening. The patient is submerged in a tub of water of 99° F., with a poncho around the neck. Gradually add hot water until the temperature of the water is 105° F., and keep the patient submerged in this for ten minutes. This should elevate the sublingual temperature to about 102° or 103° F. After this, remove the patient from the bath and wrap in warm woolen blankets and allow the patient to cool off for thirty minutes to an hour, then thoroughly dry the skin and put to bed for the night. If the patient can tolerate this temperature, gradually increase the final temperature of the bath each treatment until a temperature of 115° has been reached. Also the time in the bath may be increased to fifteen minutes. This temperature and interval should elevate the sublingual temperature to 105° or 106° F. The treatments are given every other day unless there are contraindications or the patient does not tolerate them so frequently.

In our experience we had only two patients who could not tolerate these high temperatures. One patient would faint when the temperature of the water reached 105°. By the hot bath treatment nearly every patient gained weight while taking the baths and all experienced a sense of well being.

Patients treated by fever therapy should be given an intensive course of chemotherapy two months after termination of the fever therapy.

INTERSTITIAL KERATITIS TREATED BY HYPERPYREXIA

Twenty-eight cases of interstitial kera-

titis (most of which were very severe) were treated by the fever method. (Twenty-two cases were treated with malaria and six by the hot bath). In all but one case the photophobia, pain and inflammation subsided within two weeks. In three cases the symptoms disappeared and the eyes became white immediately after the first heat treatment. By no other form of treatment have I seen eyes clear up as they did in these three. After the paroxysms or the fever from the hot baths were terminated some of the redness of the eyes returned. This recurrence was severe in only one case. In one case an effort to reinoculate the patient resulted in only one paroxysm. This patient was treated before we had begun the use of the hot baths. Had it been later in this series the hot bath would have been used. In this case apparently the first malarial infection was terminated too soon. One case that was treated early was perfectly quiet, with normal vision, in three months. One patient had had a chronic interstitial keratitis in both eyes for two years; he had been on an anti-leucic and local treatment all this time; vision was 10/200 in each eye. Two months after the termination of his bouts, his vision was R. 20/65: L. 20/100 and he was able to return to school. Another case of chronic interstitial keratitis of three years' duration, whose photophobia was so severe that it was impossible to obtain any vision, was given malaria and six months later had vision R. E. 20/40: L. E. 20/200.

Of the twenty cases treated by malaria or the hot bath, two cases had severe relapse. In one of these an effort to reinoculate succeeded in producing only one paroxysm, which did not alter the course of the disease. The other case made a very good recovery and vision returned to 20/20 in each eye within four months, but a year later he had a severe relapse. This patient was nineteen years old and he did not receive any anti-leucic treatment subsequent to his bath. There was a question whether this was a case of interstitial keratitis following acquired syphilis. Granted we had two poor results in twenty-eight cases; that would give seven per cent poor results. Considering the rapidity with which the symptoms and the salmon patches dis-

appeared, this method of treatment of interstitial keratitis appears far superior to any previously used.

SYPHILITIC OPTIC NEURITIS

The first case treated by hyperpyrexia was a case of optic neuritis in a patient having an early tabo-paresis.

Mr. C. F. S., age fifty-two, first seen in 1925, had tabo-paresis and had been on mixed treatment. Early in 1926 he developed a paralysis of the right external rectus and a very marked optic neuritis, and his vision was rapidly failing. He was given tryparsamide treatment which did not alter the course of the disease and in December, 1927, his vision had been reduced to 20/200 in the right eye and light perception in the left. In January, 1928, he was inoculated with malaria. His mental condition improved markedly and also his gait. The deterioration of his vision was arrested so that he retained 20/200 in the right eye. When last seen in 1933 he still had 20/200 vision in that eye and was conducting his business as he had been before his trouble.

Another case of optic neuritis was in a child four years old. The optic discs were elevated 3D. with very marked peri-vascular infiltration of all the large vessels of both eyes. The swelling of the retina extended two disc-diameters into the retina. Vision was R. E. 20/30: L. E. 20/25. After having eleven paroxysms, six weeks after inoculation with malaria, the swelling and peri-vascular infiltration had completely disappeared and the vision was R. E. 20/20: L. E. 20/15. The only indication of the previous optic neuritis was a slight blurring of the disc margins of the right eye. This patient was observed from time of the inoculation, and the way the peri-vascular infiltration disappeared and the swelling diminished is only short of miraculous.

Other cases of optic neuritis were not so severe, consequently the results were not so striking, but all of them made perfect recoveries. That applies equally to the cases of secondary optic atrophy.

PRIMARY OPTIC ATROPHY

As is well known all our past methods of treating primary optic atrophy have given uniformly poor results. It is too

early to draw definite conclusions on the cases of primary optic atrophy treated by hyperpyrexia, because the late cases were so far advanced that we could not hope for much improvement or even completely to arrest the progress of the disease, while in the early cases we find the course of the disease to be variable in each individual, so that it is impossible to say this early just how permanent the improvement or the arrested condition will be. However, we have had some very definite improvements in some of the moderately early cases. Especially was this true in cases of congenital syphilis.

The following case illustrates the immediate results that may be obtained:

R. R., female, aged thirteen years, was admitted to the out-patient department of Children's Mercy Hospital, May 17, 1932. Vision R. E. = 20/50; L. E. = 20/100. Both nerve heads were extremely pale, with clear-cut margins. The right pupil measured three mm., the left four mm.; both pupils were almost fixed—only a very bright light would elicit the slightest reaction. The accommodation was good. Wassermann and Kline reactions were both four plus in blood and spinal fluid. The physical examination was negative.

The Wassermann reactions of both parents were four plus.

Diagnosis: Primary optic atrophy.

The patient was inoculated with malaria May 20, 1932, and was allowed to undergo ten paroxysms, with the maximum oral temperature ranging from 103.4° F. to 105.8° F., after which the malaria was terminated by quinine on June 22, 1932.

Convalescence was uneventful, and the vision gradually improved. At the last examination, October 13, 1933, the pupils and optic nerve heads were the same as on admission, but the vision was distinctly improved, that is, R. E. = 20/30; L. E. = 20/25.

Time does not permit detailed discussion of more cases.

DISCUSSION OF FEVER TREATMENT

The hot bath method for the production of hyperpyrexia in the treatment of chronic syphilitic manifestations of the eyes appears to be as efficacious as that of

inoculation with malaria, consequently it simplifies greatly the procedure of fever therapy and minimizes the danger.

The fact that fever therapy immediately ameliorated the symptoms, narrowed the vessels in the cornea, and in most cases diminished the congestion and the peri-vascular infiltration so rapidly, brought up the question of the *modus operandi* that is responsible for the results. There is probably something besides merely increasing the metabolic process in these cases. According to Schamberg and Rule⁷, the heat causes the thermic death of the *treponema pallidum*.

Bahr, Max, and Breutsch,⁸ by histologic examination of the brain and spinal cord of patients who died of paresis before, during, and after malaria treatment, demonstrated that the beneficial action resulting from this treatment was due to the stimulation of the reticulo-endothelial system. They found the endothelial cells lining the blood vessels, the lymphocytes in the peri-vascular lymph spaces, and the stellate Kupffer cells were increased in number and size. These cells became intensely phagocytic in their action and destroyed the invading parasites by using them as food. The macrophages were frequently seen enveloping from one to three of the red cells containing the malarial parasites in various stages of disintegration. These investigators even demonstrated the increased activity of the macrophages in the test tube when the temperature was elevated.

It is assumed that the *treponema pallidum*, being a similar protozoan organism, is consumed in the same manner. Breutsch⁹ believes that at normal temperature these phagocytic bodies are inactive, but they become voracious when the temperature is elevated. This explanation fits in admirably with the clinical course of heat therapy in the cases of interstitial keratitis. After the patient had had two or three hot baths or malaria paroxysms the conjunctiva became much whiter, and during the fever period the congestion was again greatly increased and was followed by a further blanching of the eyes. In several cases the eye became perfectly white after the third paroxysm and remained white as long as the reticulo-

endothelial system was repeatedly stimulated by the recurrent fever. After a week of freedom from fever, a slight congestion returned and remained for several weeks.

Syphilis in the acute stage is a stimulant of the reticulo-endothelial system, and many cases are on record in which there apparently was a spontaneous cure of this disease. In other words, the macrophages were sufficiently stimulated to destroy all the spirochetes. When a patient develops the parasyphilitic manifestations, or a child is born with congenital syphilis, the reticulo-endothelial system is not sufficiently stimulated, and only by stimulating it can one hope to effect any improvement. In congenital syphilis the reticulo-endothelial system is apparently immune to the stimulating effects of the spirochaeta pallida and it fails to mobilize the macrophages to overcome the infection. This would account for the unsatisfactory results obtained by the majority of other forms of treatment in inherited syphilis. In the opinion of the writer the intravenous treatment with arsenicals effects its benefit in these cases by its irritating effect on the endothelial lining of the blood vessels, thereby causing greater activity of the macrophages, which are cast off endothelial cells lining the blood vessels.

Having concluded that fever therapy is a treatment of choice, there remains the selection of a method of application. In hospitals in which many syphilitic patients are treated it is possible to preserve a malarial parasite of low virulence, so that it may be available at all times, but in smaller communities and in private practice this form of treatment is frequently impossible. Malaria is a very debilitating disease, and in patients with impaired physical vitality it should be used with caution. However, in such patients the hot water baths should also be used with caution, since one patient fainted in the tub. In this case it was impossible to obtain the desired hyperpyrexia, because the patient could not tolerate the necessary high temperature of the water for a sufficient length of time. The fact that the physician has the hot water treatment under his control at all times makes it the safer method for the fever treatment of the debilitated. This is not always true of malaria treatment, as irreparable damage

might result before the physician would be able to terminate the paroxysms.

CONCLUSION

Fever therapy relieves the symptoms and obliterates the vessels in the cornea in interstitial keratitis more rapidly than any other form of treatment.

Syphilitic optic neuritis improves more rapidly by fever therapy than by any other form of treatment.

Apparently fever therapy arrests the progress of primary optic atrophy and in some cases even improves the vision and the fields, at least temporarily.

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Orchitis and Oophoritis Parotidea (Osler)

A. P. Ohlmacher, Royal Oak, Mich. (Journal A. M. A., June 13, 1936), cites an instance of orchitis parotidea without parotitis along with a case of primary oophoritis due to the virus of mumps. Rather definite similarities existed in the appearance of the involved ovary in the second case and that of the testicles exposed at operation by other workers. There would seem to be little doubt concerning the authenticity of this case of oophoritis parotidea. No other logical explanation for the appearance of the ovary, especially in the light of subsequent developments, can be readily advanced. A specimen for microscopic study was not obtained. The whole subsequent clinical picture, including the general physical condition of the patient, the chronological sequence of events leading to the development and subsidence of the parotid involvement and the physical characteristics of the salivary protuberances was definitely not that of the suppurative post-operative type of parotitis. The author is convinced that the exposure and manipulation of the offending ovary were important factors in the prompt development and full blown picture assumed by the parotitis. Whether without operation the parotitis would have remained unsullied and the case run its course as one of the oophoritis parotidea without parotitis is idle speculation. It is probable that this excessively unusual pathologic process will always present enough similarity to acute appendicitis to suggest operative intervention strongly, even granting that watchful waiting and astute differential diagnostic efforts would surely be rewarded by cognizance of the true state of affairs.

The Problem of Treatment of Cancer of the Breast*

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In spite of the easy accessibility of the primary lesion to various forms of therapy, cancer of the breast still furnishes one of the most discouraging chapters in the treatment of malignancy. The recognition of this fact first stimulated the surgeon and later the radiologist to improve their methods of attack. But as one surveys the field, it seems quite evident that there has been too much haphazard effort, too little application of logical reasoning and too little cooperation in combating this disease.

The principles of the radical mastectomy were formulated following a recognition of the tendency to wide dissemination of the disease along the lymphatic channels. If the surgeon extended the boundaries of his operative field as far as possible, he obviously had a better chance to remove all the disease than if the field were restricted. Unfortunately in a large percentage of cases, the radical operation has proved to be inadequate. In other words, good surgery reached the limits of its accomplishment some years ago leaving much still to be desired.

It was quite natural after noting the beneficial effects of radiation on malignancy that such therapy should be turned to as a means of improving the results of surgery. However, in spite of the obvious palliation usually obtained in recurrent carcinoma of the breast, this post-operative "shot in the dark" proved rather disappointing in its contribution. A few years ago after a statistical study of cases without and with post-operative radiation, Greenough was unable to demonstrate any improvement of results, and Lee's New York Hospital studies revealed little for the radiologist to brag about. On the other hand, Pfahler, who at this time was

following somewhat the same methods of radiation in vogue today, was reporting such an improvement in results over surgery alone that many questioned his veracity. In the light of present day knowledge I think it is only fair to frankly admit he had been pointing the way to better radiotherapy. More recently Portmann¹ and others² have shown definite improvement in results from post-operative radiation over surgery alone.

One must bear in mind that radiation is still in its infancy and that there are many problems yet to solve. The results of today are decidedly better than those of yesterday and we have every reason to expect that those of tomorrow will excel today's. During the past two or three years the general acceptance of the principle of the single protracted intensive treatment has marked a big advance. We now know that many cases of cancer in different parts of the body previously considered hopeless by any method of therapy can be cured. Quite naturally we turn our attention to cancer of the breast with new hope and courage.

Perhaps it may clarify our reasoning somewhat if we look into the rationale back of post-operative radiation. Briefly stated once again, the surgeon by means of the radical mastectomy attempts to reach beyond the furthest boundaries of the malignancy. If he succeeds in getting beyond the lymphatic extensions, a cure is certain. If he does not, then obvious recurrence must take place unless some other agency can reach further than the knife and finish the destruction. No valid reason can be proposed for post-operative radiation other than the hope that it will destroy or retard the growth of cancer cells which have spread beyond the operative field. It is simply a further extension of the outposts of attack such as has marked the progress of surgery in this field.

*Read before the Section on Dermatology and Radiology, Annual Meeting, Oklahoma State Medical Association, Enid April 7, 1936.

Originally the surgeon occupied his attention with the local growth and then later gradually extended his field of operation. Unfortunately there has continued a tendency even up to this day to fix the attention entirely too much on this local tumor. It was long ago discovered that removal of this primary growth had no retarding, but rather if anything, a stimulating effect on its extension. In other words, as regards the cure of the cancer, the local growth pales into insignificance in relation to its extensions. Complete removal of the breast or even the radical mastectomy is necessarily of minor consideration when the cancer has already spread beyond the operative field. Logical reasoning demands that we first should turn our attention to the possible outlying lymphatic extensions before they have a chance to spread farther. If we can destroy these, the problem is solved, as the central portions of the tumor can easily be taken care of.

If this viewpoint is correct, then the treatment of cancer of the breast should primarily be a radiological rather than a surgical problem. The majority of surgeons will doubtless be inclined to ask some pertinent questions before relinquishing their long time domination of this field. I shall therefore endeavor to anticipate some of these interrogations.

A few moments ago I spoke of post-operative radiation as a "shot in the dark." I was not trying to suggest that pre-operative radiation would not in part be the same thing. There is no tell-tale evidence of the permeation of the growth along the lymphatic channels, apart from axillary involvement, save that which indicates the chances of complete eradication are probably gone. We cannot therefore with any certainty determine where we should establish the boundaries of the area to be radiated. All we can do is to make it as extensive as seems feasible, judging from the location of the primary tumor and its obvious metastases, our past experience and our knowledge of the usual channels of infiltration. This area will, of course, be much larger than that covered by the most radical operation.

But you will ask, can the radiation actually destroy the malignancy and in particular the outlying portions of it? This

is answered very positively in the affirmative by the marked increase in percentage of five-year cures now being reported from various centers as a result of post-operative radiation. Pfahler³ has recently shown that in his experience surgery followed by radiation has doubled the number of five-year cures over that of surgery alone when there has been involvement of the axillary lymph nodes. In cases of poor operable risks or where surgery has been refused, Pfahler and Adair⁴ have both obtained at least as high a percentage of five-year cures from radiation alone as has been brought about by surgery alone in the best clinics. Wintz's⁵ three-year cures with roentgentherapy alone are considerably better than the three-year surgical cures taken from the world literature. Allow me to emphasize once again that considerable water has gone over the dam in the way of improved radiation since those cases were treated from which the above statistics were obtained.

In considering the changes brought about by radiation one must always bear in mind that the lethal effect upon the cancer cells is not only due to direct action, but also to the reaction produced in the normal tissue which makes up the cancer bed. When there is a large mass of cancer cells with little normal tissue remaining as may be the case in the primary breast tumor or in the metastatic axillary lymph nodes, then this latter component necessarily plays a smaller role. This in part explains why viable cancer cells may still remain in such locations even after very heavy radiation. On the other hand but a short distance from the primary tumor, cancer cells are present only in small groups. Handley⁶ has clearly demonstrated them growing in a small cord in the lymph vessels. He has also shown fairly conclusively that sufficient reaction is produced in the tissues oftentimes to destroy the malignant cells. Of course this destruction is usually back of the growing point of the invading cells. But, at any rate, we find here only small groups of cancer cells in the midst of normal tissue which without aid shows considerable reactivity to the cancer process. It is only reasonable to assume that by means of radiation this reaction can be built up to the point where in the majority of cases

all of the malignant cells will be killed throughout the area radiated with the exception of those regions where they occur in large masses. These may then be removed surgically.

Occasionally when the question of pre-operative radiation is considered, surgeons express fear concerning what might happen as a result of the delaying of the operation. In other words, they have a hard job to see very far beyond the primary tumor. If a thorough course of radiation is given, with the necessary interim of six to eight weeks before surgery, they need have no fear of anything but a regression of the tumor. The amount of the interval between radiation and surgery depends, of course, upon the severity of the radiation reaction. If the radiation is inadequate, as unfortunately is very frequently the case, the growth should at least be so retarded that nothing is lost by the very short delay necessary before operation. We trust that in due course of time physicians dealing with cancer will generally acquire some conception of what constitutes adequate radiation and will demand it.

Another very pertinent question can be raised as regards diagnosis. Should we take biopsy specimens? If the lesion in the breast is obviously a cancer, as is true in a large percentage of the cases presenting themselves for treatment, then removal of a biopsy specimen cannot contribute anything to the patient's interest, but instead tends to delay institution of treatment and perhaps make conditions a little less favorable for it. On the other hand, if there is still doubt after transillumination of the breast and a skiographic examination,⁷ a biopsy should be resorted to and radiation treatment instituted as soon as possible while studying the microscopic sections, and continued if the growth proves to be malignant. The area of probable lymphatic extension would, of course, be treated first and after a few days the breast area could also be included. In fact, if mastectomy is to be performed, it is probably immaterial whether or not this area is treated. One might even go a step farther and conclude that if the lesion was so early as to require a biopsy for diagnosis, the complete operation might be carried out immediately and followed by radiation.

Following the preliminary course of radiation therapy, what is to be done with the primary tumor or perhaps to axillary metastases? Shall the treatment be made wholly a radiological problem, as some advocate, or should surgery still have a place? That the primary tumor can be thoroughly destroyed by radiation, there is no doubt. If the growth is too resistant to be eradicated by roentgen therapy alone, then interstitial radiation by means of radium needles imbedded throughout the breast can finish the work. Such use of radium, however, constitutes a rather expensive procedure. Except perhaps from the cosmetic standpoint I fail to see that it has any special advantages over good surgery. The axilla on the other hand furnishes a more difficult problem for radium treatment. The proximity of important blood vessels and nerves makes the effective application of radium needles a decidedly ticklish problem. I doubt very much if the axilla can be uniformly, effectively and safely radiated by such means. Accordingly, my personal feeling is that in operable cases a radical mastectomy should be performed as soon as possible following the preliminary roentgen therapy. Doubtless the operator need not be quite as radical as formerly in his removal of the deep lymphatics, but there are too many cases⁸ where the tumor infiltrates the muscle to suggest that the pectorals may be saved.

Since radiation therapy alone can give such a good account of itself, there is much less reason now than formerly for operating on elderly people, those who are poor operative risks or who offer little or no hope of a cure. As a general rule cancer progresses slowly in old people, often so slowly that they can carry an untreated cancer for years without much discomfort. Certainly only occasionally is there justification for surgery, when with or without radiation a very large percentage of them will die of some condition other than cancer.

In speaking of cases too far advanced to be operable we are at once put to the pains of setting up certain boundary lines. If there is no evidence of invasion of the deeper structures, but there is extensive involvement of the sub-cutaneous tissue beyond the breast (cancer en cuirasse) or

partial fixation of the breast to the chest wall, I believe no one will argue in favor of surgery's playing any major part in the treatment. In this same category is also a very active type of breast cancer in which an inflammatory reaction develops. Lee⁹ reports a series of twenty-six cases with no cures. The appearance of this reaction evidently indicates we have a rapidly spreading growth which has already gone beyond the bounds of probable cure. At any rate, they seem to be made worse by surgery and according to our present knowledge should be treated by radiation alone. As to how the extent of lymphatic metastases should govern our method of procedure there will of course be some difference of opinion. It is, we believe, generally accepted that involvement of an extensive chain of lymph nodes indicates a rapid spread of the disease with said lymph nodes offering little hindrance to its advance. One may also assert that in most cases at least the supraclavicular lymph nodes are invaded secondarily to the axillary nodes and the cervical secondarily to the supraclavicular. If the disease has spread as far as the cervical lymph nodes, one can hardly conclude otherwise than that cure is impossible and that any major surgery is contraindicated. Some authors¹⁰ claim that no permanent cures are ever obtained if the disease has spread only as far as the supraclavicular nodes. Bloodgood¹¹ in a review of Halsted's cases found only ten per cent of five-year cures when the disease had reached the apical axillary glands, whereas it amounted to twenty-five per cent if it had not spread beyond the base glands. We should be able to determine definitely the point in this lymphatic spread at which the chance of cure vanishes. Certainly all cases beyond this point should be treated solely by radiation.

We have already pointed out the lessened need for surgery in elderly people. As we approach the younger ages in which cancer of the breast occurs, surgery again becomes a more and more questionable procedure. Below forty when the fires of metabolism burn very actively, cancer also grows quite rapidly. When the age of thirty is reached the hope of a cure is practically at the vanishing point. If cancer of the breast appears at this age or

younger, the fight should probably be made entirely by the radiological method. The occurrence of cancer during pregnancy or lactation does not affect our age figures as much as one would expect as Kilgore¹² has reported surgical cures of ten and thirteen years duration in two patients operated on at the age of thirty-three. These cases were taken from the records of Johns Hopkins Hospital. Lee,¹³ however, in eleven cases under the age of forty had no cures, but one woman lived five years and ten months. Some have advocated sterilization of these younger women because in many cases marked palliation has seemed to result from it. This procedure at least merits serious consideration.

From what I have already said it is plainly evident that I feel the chief reliance should be placed on the roentgen ray for radiation therapy. By this method a reaction of fairly uniform intensity can be attained throughout the area to be treated at a not-prohibitive expense. Similar treatment can be given by large quantities of radium, but it is very expensive and there is no evidence that it is more potent. Under certain conditions radium needles can be used fairly effectively. A few moments ago I spoke of the problems connected with the use of radium needles in the axilla. I am sure it is much safer and more logical to attack it with external radiation. Much the same holds true for infiltrated areas of subcutaneous tissue surrounding the breast.

Perhaps some one may suggest that interstitial radiation can produce no appreciable effect on the lungs whereas radiation from external sources may cause a pneumonitis. It is true that in the latter case the lungs may receive a fairly heavy dose, if adequate treatment is given, while in the former, it is too small to even be considered. Due to this fear of lung damage many give all or part of the treatment by tangential radiation; that is, radiation directed at rather acute angles. In this way the lungs can be spared from excessive doses even though a strong reaction is produced in the chest wall.

Unfortunately many breast cases are being treated today by repeated series of radiations where the intensity of reaction is never high enough that there is any

chance whatever of destroying carcinoma cells. The most pathetic part of the picture is the fact that whatever chance there is of a cure is locked up in the first radiological and surgical effort. As early as 1924 in a paper read at Chicago Dr. Regaud of the Curie Institute said: "The observations on human cancers, treated by radiation, have revealed another most important conclusion; the progressive decrease in radiosusceptibility of the cancer cells treated by repeated non-sterilizing irradiations. These ineffective irradiations will finally bring a necrosis of the treated region. This well-established fact forces us to adopt the rule of the single protracted treatment in human cancer." To destroy carcinoma cells by radiation requires the equivalent of two or more erythema doses so that a marked reaction is produced throughout the cancer bed. Therefore, the area to be treated should be gradually carried up to as high a reaction as is possible without permanent damage by a continuous series of x-ray treatments lasting from four to six weeks. When the course is over or shortly thereafter there should be an intense erythema throughout the whole area. One of the most important things we have learned in the last few years is the high intensity of skin reaction which can be produced without untoward results provided we do not give beyond a certain amount each day. Of course, such reactions produce quite a little discomfort and more or less general malaise for a time, but patients are quite willing to endure it, if they feel by so doing, their chances of final cure are thereby improved. After this intense reaction (not burn) vanishes, the skin tends to peel off in large sheets leaving an epithelial surface which is not far from normal. If patients do not develop such a reaction they have been deprived, from a radiological standpoint, of some of their chances of a cure. In case a proper reaction has been produced pre-operatively, there is no logic in further treatment shortly after the operation. In fact, such treatment would do more harm than good. Any future radiation should be entirely dependent on recurrences.

The field of cancer therapy probably embraces more special knowledge than any other branch of medicine. Those who treat cancer should have a very good

grasp of the whole subject. We should hear less of surgical and radiological viewpoints. Instead, the cancer patient should be treated by the conscientious, cooperative efforts of those who are on the firing line of progress and who are versed in what constitutes good surgery and radiotherapy. As we approach this ideal, there is every reason to believe that cancer of the breast will no longer take the enormous toll of human lives that it does today.

Further studies by Adair (14), and published after this paper was written, show much poorer results in radiation treatment of cancer of the breast without operation than was evident at the time of his earlier paper (4). His present studies on the effects of pre-operative radiation will doubtless be very helpful in solving the most efficient way to treat this disease.

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Fracture of Neck of Femur

F. J. Gaenslen, Milwaukee (Journal A. M. A., July 11, 1936), believes that while encouraging reports of internal fixation of fractures of the neck of the femur are at hand from many authors, each developing his own technic, not enough time has elapsed to permit one to speak of end results. It appears likely, however, that end results will be reached earlier in those cases in which internal rather than external fixation is used, since conditions established by internal fixation are more or less comparable to those obtaining in the impacted cases. Complications and mishaps may be expected in any new procedure, and indeed many have been reported; but each such incident has been a lesson, often pointing the way to avoidance of danger.

VISCERAL INJURIES*

F. A. HUDSON, M.D.

ENID

The subject of injuries to the chest and abdominal cavities, sustained in automobile and industrial accidents, termed visceral, is entirely too large a subject to be covered in a paper to be read at a meeting such as this one. To illustrate: A few of the possibilities of injury to the abdomen are contusion, lacerations or rupture to the liver, gall bladder, pancreas, duodenum, any part of the small bowel, any part of the colon, the kidney, the spleen, the bladder, hematoma of the abdominal wall, retroperitoneal hematoma, laceration of the mesentery or the omentum, hematoma of the omentum, laceration or thrombosis of any of the intra-abdominal vessels, particularly the mesenteric vessels, damage to the cord of various kinds, etc.

Injuries to the thoracic viscera, of course, cover injuries to the pleura, to the lung, to the structures of the mediastinum, pericardium, or heart, itself; pneumothorax, hemothorax, hemo-pneumothorax, massive collapse of the lung, rupture of the diaphragm, pericardial mediastinal hemorrhage, and of course other complications, such as pneumonia and empyema, which may occur even weeks after the injury—these various injuries being caused in most instances by blows, punctures by foreign bodies, puncture by fractured ribs, and others. So it is manifestly impossible to attempt to deal with such a multitude of possibilities from the standpoint of symptoms, differential diagnosis and treatment. We shall attempt in this short paper to cover the subject only in a very general way, that is, we shall discuss the injured chest and abdomen, and not the specific injuries of the chest and abdomen.

Puncture wounds of the chest by some foreign object, if they produce serious wound of the heart or great vessels, are usually so quickly fatal that we are not called upon to treat them. If the injury is

to the trachea, the extravasation of air in the tissues of the neck and face may be such as to cause sufficient pressure as to make death from asphyxiation a possibility. Such a case might be relieved by incision of the skin and fascia of the neck, or by tracheotomy.

Puncture wounds involving the pleura or lung may result in very few symptoms, or in grave symptoms—the latter usually being due to the formation of a pneumothorax, or hemothorax, or both. A sucking wound in the thoracic wall may greatly increase intra-thoracic pressure and such a wound should be, so soon as possible, cleansed and closed. A valve-like wound in the lung may result in such increased pressure as to endanger life. Such a condition can be relieved by aspiration of the air and blood, with the resulting inflation of the lung.

Puncture of the contents of the thoracic cavity by fractured ribs usually involves only the lung or the pleura, because that part of the chest wall over the mediastinum outside the sternum is mostly cartilage. The results are mostly the complication of intra-thoracic pressure from air or blood or both, and are relieved by the removal of the pressure by aspiration of the pleural contents, if the symptoms of pressure are severe enough to warrant it. Continuous hemorrhage in the chest cavity can, of course, necessitate entering the chest and ligating the bleeding vessel, which may be a vessel in the chest cavity, the internal mammary, or an intercostal vessel. Foreign bodies, if large, probably should be removed, because if allowed to remain, they may result in infection later. Large quantities of fluid or blood should not be allowed to remain in the chest because of the resulting displacement of the lung, adhesions, etc. Air in the chest cavity, if not under too much pressure, probably should not be removed because it will absorb and may be of considerable value in controlling hemorrhage.

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Blows to the chest wall, or crushing injuries may produce contusions or lacerations of any of the contained viscera, or may produce puncture wounds from the ends of fractured ribs. If we are dealing with a contusion only, our treatment will consist in general measures to relieve pain, control shock, and try to prevent such secondary manifestations as pneumonia. Lacerations and puncture wounds of the chest wall, due to this type of injury, of course, give rise to the same treatment as puncture wounds discussed before. Collapse of the lung, if attended by fluid or air in the pleura, is treated by aspiration of the foreign substance; and collapse of the lung without a wound to the lung or chest wall is, of course, treated by forced respiration, administration of carbon dioxide and oxygen.

In a general way, we can say that wounds to the chest, if not too severe to cause rapid death, the ones which get to the hospital, and which we see, should be treated conservatively. The injured person should be kept under close observation. He should be carefully examined by inspection, percussion, auscultation, and the x-ray. He should be made as comfortable as possible by change of position, by strapping, and drugs. If he is in shock, this should be combated. If he develops cyanosis and dyspnoea, pallor, thready pulse, we should suspect hemorrhage and intrathoracic pressure—in other words, mechanical interference with his respiratory and circulatory functions. Much can be done, of course, to relieve this condition. Occasionally opening of the chest cavity may be indicated. Withdrawal of fluid or blood, if in large quantities, is indicated, but not immediately in the absence of pressure symptoms. In the cases that do not require interference, it must be remembered that later, even weeks later, the formation of pus some place in the chest cavity may require intervention. Cutaneous emphysema is a rather common chest condition where the ribs are fractured, and is usually not serious. The patient who is brought to the hospital, apparently not very seriously injured should be carefully watched anyway because some hours later, as a result of hemorrhage or air pressure, his condition may be grave. It has been surprising to me how much dam-

age could be done to the contents of the chest cavity with survival of the patient, with no ultimate ill effects.

To summarize: Treat the chest injuries expectantly. Get all the information you can by physical examination, x-ray, etc. Keep them under close observation, and meet the symptoms as they develop.

Wounds of the abdominal aorta and larger vessels of the abdomen are not liable to require treatment. They are apt to be too rapidly fatal. Every punctured wound of the abdominal wall, in my opinion, should be explored—that is, an incision should be carried into the abdominal wall as far as the wound extends and if the peritoneum is perforated, the abdominal cavity should be explored if the patient's condition is such as to warrant it at all. If his condition is not such as to warrant it, an attempt should be made at once to improve his condition by intravenous glucose, acacia, or blood, if it can be obtained, and the wound then explored. If a foreign body has perforated the abdominal wall, there is a very strong likelihood that it may have lacerated or perforated something in the abdominal cavity, and if there is hemorrhage, it is imperative that it should be stopped as soon as possible, and if there is perforation of a hollow viscus it should be repaired before there is much leakage.

In my opinion, in these cases the chief indication is to explore the wound as soon as possible whether or not the patient has any other symptoms of serious injury or not. Other injuries in which there is evidence of a possibility of injury to the abdominal contents should all be regarded as serious and kept under close observation. The problem is often complicated by the fact that there are often other injuries of sufficient severity as to cause shock or to cause hemorrhage, and other injuries, such as injuries to the back or spine may be attended by abdominal pain and abdominal rigidity. If there is no evidence of any other injury of much consequence, the problem is simplified, but if the patient has two or three broken bones, as for instance, a fracture of the femur, which could produce a good deal of "knock-out," and at the same time has evidence of some injury about the abdomen, the situation is complicated. Generally speaking, such a

patient should be rendered comfortable, but not too comfortable—that is, not comfortable enough to cover any symptoms, and thoroughly inspected and palpated for evidence of injury all over the body. A record should be made of his pulse and blood pressure, general appearance, amount of abdominal tenderness, amount of rigidity, its location, and areas of dullness. A specimen of urine should be obtained and examined for blood. If no urine is obtained, or in meager quantities, the bladder should be investigated. If the patient is in good general condition, he should be put to bed, given nothing by mouth or rectum, and watched—particularly his pulse, blood pressure, general appearance, and his abdomen for tenderness, distention, and rigidity. If after a few hours his general condition is worse, and this is attended by the appearance of definite symptoms of something wrong in the abdomen, his condition should be improved as much as possible and the abdomen opened without much delay. If on the other hand his general condition is poor when he is admitted to the hospital and he is in shock, every effort should be made to improve his condition. If this is successful, his pulse becomes better, his blood pressure more normal, this patient should be again watched. If he is not seriously hurt, as a rule, once over the shock, he will continue to improve and the evidence of abdominal injury will not become more marked. If, however, the evidence of intra-abdominal injury becomes more definite and his blood pressure steadily drops, a hemorrhage should be suspected and his abdomen explored.

Again, if the patient is brought into the hospital in serious condition, is pulseless, and his blood pressure cannot be improved by appropriate treatment, and if there is evidence of abdominal injury, and the case is probably quite desperate, he should be given the benefit of an exploration, but if possible, several donors should be procured and he should be given blood before and during the surgical procedure. We have had a good many of these cases who have been bleeding freely from a lacerated liver or ruptured spleen, or lacerated mesenteric vessel, who were in very much better condition immediately following the surgery than when the operation was

begun, this being due to the fact that we have several times been able to recover as much as two quarts of blood from the peritoneal cavity and return it to the patient's circulation.

A quite typical case which illustrates this is a boy who was caught between an elevator platform and the floor, and badly squeezed. He was brought to the hospital in a good deal of shock, and of course, in a good deal of pain, with much tenderness about the abdomen. Of course, these latter symptoms did not amount to very much, as the boy had enough injury to the abdominal wall to cause him both pain and tenderness. He was given some glucose intravenously, made comfortable, and his condition improved very much, but after about an hour his blood pressure began to steadily drop, he became pale, a little restless, abdominal rigidity was general, and we thought more pronounced, and we thought possibly he had some dullness in the flanks. In the meantime we found some donors and about this time decided to open his abdomen, started blood transfusion before the anesthetic was started and continued it during the operation. He had a very deep laceration of the liver and the peritoneal cavity was pretty well filled with blood, a large part of which was recovered and returned to his circulation. He left the operating room in much better condition than when he went in, and in much better condition than at any time after he had entered the hospital, and made a quite uneventful recovery.

Almost all these cases of hemorrhage in the abdominal cavity can be operated safely enough if plenty of blood for transfusion can be obtained; and where there is no perforation of the stomach, intestines, or bladder, and no contamination of the peritoneal cavity, the blood from the peritoneal cavity can be mopped out, filtered, citrated, and returned to the circulation quite easily and with much benefit. We think that most wounds of the liver can be controlled by suturing, or by suture and pack, but a damaged spleen is liable to have to be removed. Hemorrhage from the mesenteric arteries can be controlled easily unless it is one of the large trunks, in which case ligation may interfere with the circulation of the intestine. In other words, the case with hemorrhage in the

abdominal cavity, which is still alive, or in any kind of condition at all when he enters the hospital, can probably be handled.

If there is evidence of laceration of the kidney, I think the case should be treated conservatively because the majority of them control themselves. However, I have had two cases with injured kidneys which bled so profusely that complete removal of the kidney was required to control the hemorrhage. If there is any evidence of rupture of the bladder, of course, delay means a severe peritonitis and the patient should be operated at once, or certainly so soon as his condition will warrant it. Injuries to the lower abdomen, especially where the bones of the pelvis are injured, should be investigated carefully for bladder injury. A ruptured bladder is quite easy to demonstrate.

Rupture of any part of the intestinal tract, of course, is serious because if allowed to go any time, it means extensive soiling of the peritoneal cavity and possibly a fatal peritonitis. If there is intra-abdominal hemorrhage, of course, one will after a short time become suspicious of this and may find the injured viscus at the same time he looks for the source of hemorrhage; but if there is little hemorrhage or no hemorrhage, it may be quite difficult to be sure of the condition early. These cases may not have shock and their general condition may be good, but if the pain becomes more severe, if the rigidity becomes more pronounced, and if the abdomen begins to distend a little after not too many hours, it is probably safer to investigate. A perforated bowel or stomach is not a very serious thing if taken care of the first few hours, and it is probably better in these cases to weigh the chances of a useless exploratory against the chances of a fatal peritonitis. Of course, many of these cases which are quite typical can be described more graphically, but unfortunately, many of them are not typical, and I think it is quite difficult, maybe impossible, to put in words just what one sees in these cases, but I am quite convinced that a surgeon who has seen a great many of such cases over a period of years is not liable to do many explora-

tions without finding something. What we call a "hunch" is most often, I think, based upon a subconscious impression, and consequently is quite likely to be accurate.

Now, in conclusion, we have injuries to the contents of the chest and to the contents of the abdomen which are so rapidly fatal that we have not much chance to do anything for them, but those cases which get into the hospital should be considered as having a fair chance of recovery, even though seriously hurt. All of them should be very carefully examined at once. Immediate steps should be taken to improve their general condition. In both, the possibility of severe hemorrhage should be considered and its likelihood established as soon as possible. In the chest injuries, however, in the case of hemorrhage the patient should be treated probably more expectantly than in the abdominal injuries. The hemorrhage in the chest is more liable to control itself than the severe abdominal hemorrhage. The greatest danger in chest injuries is, of course, pressure, which interferes with respiration. In the absence of severe intra-thoracic pressure, it is better to let the injured man alone and watch him carefully. On the other hand, in abdominal injuries, the two great dangers are hemorrhage and a contamination of the peritoneal cavity which will later lead to peritonitis. Neither of these conditions can be temporized with and very strong suspicion of the presence of either is cause for interference without delay.

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DISCUSSION

Dr. Von Wedel, Oklahoma City: Dr. Hudson sent this paper down to me and commented that it wasn't very good. I beg to differ. I think it is a very thoughtful paper. It is so large a subject that I don't intend to discuss it as a whole but there are some interesting phases that I want to bring out. Some years ago, eight or nine or ten years ago, when people first began to drive rather fast, I saw my first heart injury. At that time I did not know, did not think what it was. In the meantime I have seen two or three cases of this injury, in fact several of them, and have followed up some of them with

electrocardiograms and had a great deal of pleasure in listening to a paper on heart injuries at New Orleans at the Southern Medical two or three years ago. I had one case where the man was thrown probably against the wheel and was bent over. He was in extreme shock when he was brought in. There was no other evidence except low blood pressure. He was in extreme shock; his temperature was 92, there was profuse perspiration and all the typical picture of cardiac thrombosis. An electrocardiogram was done and followed up by repeated electrocardiograms, and this man gave the picture of coronary thrombosis. He was a young man. I believe some of these people who have been forcibly thrown against some object, or any other direct blow will cause the same conditions in the muscle of the wall of the heart such as we see in the leg or arm or back or any other place, and there will be hemorrhage directly into the wall of the heart and you have the typical symptoms of coronary thrombosis. The second thing I want to mention is some of these chest injuries. Dr. Hudson mentioned the question of hemorrhage. Hemorrhages of the chest or hemorrhages from injuries to the chest, occur from the internal mammary artery. These hemorrhages should be treated just exactly like you treat a hemorrhage from tuberculosis or anything else. I think in the beginning it should be aspirated and artificial pneumothorax instituted, squeezing the lung tightly into the chest. You can control your hemorrhage of the lung by artificial pneumothorax and can do it without shock to the patient. Then we have the cases of lung injury in which the chest cavity fills up and we have the embarrassment of respiration, cyanosis, and cardiac embarrassment from hemorrhage that is not serious enough that you need artificial pneumothorax, and here the patient can be treated with continuous suction, needling the chest and using continuous suction. There is one other phase of chest injuries I want to speak of, and that is emphysema. We have all seen some very serious cases of emphysema in which the lung is torn or the bronchus torn, sufficiently that the constant pumping action of the lungs fills the tissue of the medias-

tinum and these cases are often fatal. These cases likewise can be treated with decompression, using pneumothorax, and your cyanosis and your cardiac embarrassment will cease. There is one other phase of this paper which I should like to discuss and that is injuries about the pelvis. I think in every suspected case of any injury in the lower abdomen, the patient should be promptly catheterized, because there is no more radically fatal peritonitis than peritonitis resulting from a ruptured bladder. We issue an order to catheterize all these patients promptly. If there is any suspicious blood or if we are not able to obtain urine we are very prone to drain the bladder. Most of these bladder ruptures are not intraperitoneal but are extra vesicular, and you have an infection in the perivesicular tissue and rapid slough. Now in these cases we do bladder drainage, and if the patient is in shock, instead of going ahead and opening the bladder we put in a catheter. All we want is the rapid drainage of the bladder.

Question: If the blood is sterile in the abdominal cavity, why not just leave it in the abdominal cavity and let it be absorbed?

Dr. Hudson: I don't think Dr. Von Wedel should have been interrupted, because if you had let him alone, between us we would have had this subject covered. He was going to talk about traumatic appendicitis. Do you believe in it or not?

Dr. Von Wedel: I heard of a case where a man was struck in the mouth with an electric light bulb and two weeks later he was operated for appendicitis and a piece of glass taken from his appendix.

Dr. Hudson: Answering this question, we believe that blood in the peritoneal cavity doesn't do the abdomen much good. It is quite true that the patient in time will absorb the serum, but about all he can get from the solid part of the blood is a lot of adhesions around it. The intestines will adhere around a blood clot about as rapidly as they will around pus. When you get it back in circulation you get it in the circulation right now, and it is the patient's own blood and you never get any kick, and it is easy to do.

DIGITALIS—ITS USES AND ABUSES*

GEORGE H. NIEMANN, M.D., F.A.C.S. AND DOUGLAS M. GORDON, M.D., M.B., F.A.C.P.
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In consideration of this drug, digitalis, and its associated glucosides, we humbly present for your consideration the following facts and observations. In doing so, we realize that we are treading on dangerous ground. We realize that for the past two decades the proper use of this drug has been the bone of contention among physicians more than any other drug in our pharmacopeia. Many of you no doubt have had a great deal more experience with this drug, and can probably use it to greater advantage than the writers of this paper. Each of you who are doing general practice no doubt have your own routine which you have found from experience will give you the best results. Far be it to try to alter this method. You have learned through experience, which is the best teacher, the routine which in your hand will give the best results, and the signs and symptoms of over-dose. The scalpel in the hands of a surgeon becomes only a knife in the hands of a layman.

The story of digitalis, its empirical use by the "Old Lady of Shropshire," its discovery by William Weathering in 1776, and his memorable treatise, "Account of the Fox Glove," published in 1785, in which he warned against the abuses of this drug at that early date in medical practice, is well known to us all. Since the time of the discovery, this drug has been studied constantly in laboratories and in practice, until now we have amassed such a volume of facts that one is bewildered.

The opinion of the profession seems to be divided from the ultra-conservative, where digitalis is rarely, if ever, used, to the other extreme, where digitalis is used in almost every condition where there is the slightest indication of tachycardia or the assumption that tachycardia will develop.

As in the use of practically all drugs,

there is a therapeutic effect, counterbalanced to some extent by a deleterious effect; that is, for the function of every organ that is benefited usually the function of some other organ is impaired, and whether to use the drug or not depends on whether this improvement will more than counterbalance the ill effect caused elsewhere.

In general practice there are three drugs that are used more than all the other drugs put together: the opiates, classed as one drug; the salicylates, including aspirin; and digitalis. Of these three, digitalis is no doubt the most widely used individual drug, and perhaps the most widely misused cardiac drug.

There is an old Chinese legend which tells the story that when a wife wished to dispose of her husband she would put into his tea the leaves of a plant similar to digitalis. This, over a period of time, would cause cardiac failure and the husband's demise. The reason for this is found in the experiments which many of us have performed on laboratory animals during our college course.

In the present standardization of digitalis, two animals are used, the frog and the cat, one a cold blooded animal, the other warm blooded. In using these animals for the standardization of the drug, it is realized that their physiological functions are much different from that of man, especially the diseased human being, but when the results of this standardization are applied to the practical use on the pathological heart, we find the results to be close enough that, for practical purposes, the present standardization has proved satisfactory.

Since digitalis became such a common drug, there has been a specialization in the cultivation of the fox glove, attempting to produce a plant with a higher content of the alkaloid of digitalis. A study has been made of the part of this plant

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which produces digitalis in the most concentrated form, and the time of year at which the concentration of digitalis is the greatest. This study to a large extent has fallen into the hands of the wholesale pharmaceutical houses.

In speaking of digitalis, we realize the fact that the products of the digitalis leaves are divided into several glucosides, some of these glucosides having slightly different effects from others. We also know that these glucosides, when isolated, do not remain very stable.

In the administration of digitalis the use of the aqueous infusion has practically been discontinued as impractical, because the infusion deteriorates very rapidly. Tincture of digitalis at the present time is very satisfactory. Some products have been tested and found to be full strength at the end of seven years. At the present time there is a swing of opinion toward the use of the dried leaves dispensed either in the capsule or in tablet form, with unit standardization.

Methods of administration are: Intravenous—in this comparatively large doses should be used as the drug is absorbed as it passes the endocardium; very little of it passes through peripheral circulation. It seems to be changed into an inactive glucoside. Subcutaneous administration of digitalis is to be preferred where rapid results are desired. There is evidence to show that after two or three hours the heart will show the effects of the digitalis thus administered. In giving digitalis *per rectum* we also find this to be true, and do not seem to have the gastric disturbances that occasionally occur when the drug is given *per orum*. However, digitalis *per orum*, as long as there are no gastric disturbances, seems to be the method of choice.

Digitalis is primarily a cardiac drug. Following administration, we find that the myocardium becomes saturated with the drug to a greater extent than any of the other organs of the body. It has been proved experimentally that this drug seems to become fixed with the tissues of the myocardium, and it is impossible to wash the drug out. The only way the drug is freed from the myocardium is by the action of the muscle over a period of time;

so it is that as repeated doses of the drug are given we obtain the accumulative action of digitalis. In this regard, we find the greatest amount of digitalis fixed in the heart where myocardial hypertrophy is present, and so this type of heart gets more effect from a given dose. It has also been shown that digitalis is more effective in hearts of older people. This is due to the varying water content of the heart muscle at different ages and the hydrophilic effect of digitalis.

Digitalis acts on the heart, first, to increase the tone; second, increase contractility; third, increase irritability; fourth, increase the refractory period; and fifth, decrease the conduction time. Also, by reflex action arising from the heart and other viscera, the vagus is stimulated with the resulting slowing of the rhythm, and again inhibition of conduction. Of all cardiac conditions, it is in auricular fibrillation that digitalis gives the most striking results. The clinical improvement is due largely to the impairment of conduction and the increase of ventricular tone. In this regard, it is rather surprising that digitalis itself, in toxic doses, may produce auricular fibrillation. It has also been demonstrated that digitalis is capable of causing constriction of the coronary vessels; clinical observation bears this out in that patients under digitalis therapy will occasionally suffer anginal pains. This drug has very little effect on the rate of the apparently normal heart. If anything, it tends to decrease the volume output, due to the increase in tone.

The first electrocardiographic change showing the demonstrable effects of digitalis is in the lengthening of the interval between contractions so as to give the venous blood sufficient time to enter the auricles, and the cardiac minute output is increased. With the slower pulse, the heart fills more completely during the diastolic pauses, and its output is materially increased.

In the administration of digitalis it is frequently desirable to completely digitalize a patient. Overdosage of digitalis produces a series of toxic effects which can be easily detected clinically before becoming harmful. The first effect is a loss of appetite quickly followed by nausea

and vomiting, then diarrhea. The gastrointestinal symptoms result from direct action on the emetic center. With the appearance of gastric disturbances are changes in the pulse, and if the drug is continued, complete heart block results. Withdrawal of the drug at the first symptom of toxic effect is promptly followed by relief of all untoward symptoms.

As far as is known, the toxic effects of digitalis have no antidotes. If the toxic state is reached, the drug should be omitted for several days before resuming therapy. Digitalis in the adult is eliminated at the rate of about two or three grains daily. So, if it is desired to keep a patient digitalized, this dose will usually get the desired results. However, smaller doses may accomplish this. A patient under digitalis therapy should be constantly under the observation of a physician.

Digitalis apparently has no effect in cases of hypertension where the cardiac muscle is hypertrophied and is compensating. However, in these cases it has been pointed out that small doses of digitalis tend to diminish progressive hypertrophy, and Christian advises in these cases that where hypertrophy is to be expected small doses of digitalis are indicated. This is also true in cases where hypertrophy might develop in the hearts of older people. This is probably the reason why McCrae several years ago in his *Oration on Digitalis*, at the Oklahoma City Fall Clinics, advised small amounts of digitalis empirically in older patients, as he said he did not know why, but he was in the habit of giving this type of an individual small doses as he seemed to get good results.

In severe toxic conditions, such as pneumonias, the results obtained from digitalis therapy, in the slowing of the heart rate, do not seem to be constant. Recently I had occasion to observe a patient who was given one and one-half grains of digitalis every three hours for a week, with no appreciable slowing of the heart. The rate only slowed as the patient's condition improved. It has been shown that in cases running a fever digitalis has very little or no effect on the pulse. I also had occasion to observe one who, after several days of such therapy, developed a complete heart block. Personally, we feel, in severe toxic conditions where the only evidence of

myocardial failure is tachycardia, that morphine is the drug of choice. Morphine occupies a position of equal importance to digitalis in the opinion of those who practice cardiology. The effects are secondary by producing physical quiet in the most restless cardiac patient, permitting him to rest, thereby relieving the burden on the heart—something no other drug can accomplish. In addition, all cardiac patients are more or less apprehensive; rest and sleep are their most urgent needs.

In referring back to pneumonia and in reviewing statistics from a number of hospitals where they have tried to determine the worth of digitalis in pneumonia—a series of cases numbering many thousands, without exception the mortality has been greater in cases where digitalis was used than in cases where digitalis therapy was not used.

Wyckoff, DuBois and Woodruff, after a very comprehensive survey of digitalis in pneumonia, summarize their results as follows: "Digitalis may perhaps be life saving in an occasional patient in whom there is auricular fibrillation or auricular flutter. Auricular fibrillation and auricular flutter occur rarely, in less than five per cent of all cases. Patients developing this condition frequently recover without digitalis. It is believed by us that the routine giving of digitalis to patients with lobar pneumonia is dangerous."

Bethea states that in pneumonia where auricular fibrillation or auricular flutter develop full doses of digitalis are indicated; otherwise, no digitalis. He uses digitalis in about five per cent of his pneumonia cases.

Sturgess advises against the use of digitalis in the apparently normal heart, but only in cases where the myocardium is hypertrophied does he feel that digitalis therapy is indicated.

Ronald Hamilton, in his review of one hundred and seventy-eight cases of pneumonia, feels very similar to the way Sturgess does.

Burgess and White, over a five-year period from January 1, 1921, through December, 1925, reported two hundred and twenty-one cases of lobar pneumonia. These were divided about equally—49.8 per cent received no digitalis; 50.2 per

cent, varying amounts of digitalis. They made a very thorough analysis of these cases and from the summary found that there was a definitely higher mortality among those cases receiving non-digitalizing doses, but if the drug is to be used, full digitalization should be accomplished. It appears that the systematic administration of digitalis in digitalizing doses may be of some benefit in this series of cases.

Rufus Cole, of New York, recently made the statement that it was impossible for him to see any benefits in pneumonia cases from digitalis.

Bohan, of Kansas City, has made the statement that in pneumonia digitalis has killed more people than it has ever saved.

In diphtheria there is some evidence to show that digitalis lowers the mortality, but we feel, through experience, that digitalis should never be given to a patient with a post-diphtheritic cardiac condition, as in this case there is very frequently a heart block, and already damage in conductivity of the heart muscle.

It is the general consensus of opinion that in cardiac conditions, diuresis following digitalis therapy is obtained by im-

proved circulation in the kidneys. However, there is definite evidence to show that digitalis acts directly in the kidney as a diuretic; so, in cases of hypertension, with edema, digitalis is indicated.

To summarize: It is in auricular fibrillation and auricular flutter, associated with myocardial failure, that digitalis plays its big role. However, it is indicated in cases of cardiac hypertrophy or where hypertrophy may develop. It is contraindicated in pneumonia without an associated auricular fibrillation and in the post-diphtheritic heart. Digitalis may be used as a diuretic.

In reviewing this paper, we sincerely hope that you will not be too critical of the facts as we have mentioned them and as we have observed them in our practice during the past. Sir William Mackenzie made his name in the world of medicine not through his experiments in the physiology laboratory, but in the laboratory of his practice. It is true that the laboratory of scientific research on animals has its place, but whether and how a drug will act can only be proved by the watchful eye of the clinician.

PRE-NATAL CARE*

With Special Reference to External Version

H. M. McCLURE, M.D.
CHICKASHA

The title of this paper is not one to cause any doctor to come, or stay to listen, but I would like to discuss a phase of pre-natal care you will be unable to find in the current books, or periodicals, and which I am sure, will lower your fetal mortality fifteen per cent. This particular phase of pre-natal care is properly called external version.

But first let us review a few of the important points in connection with pre-natal care. The first visit of an expectant

mother, especially if she has never been your patient, is rather exacting and trying for her, and you must proceed very kindly and cautiously. The lines of interrogation and conversation you should follow will vary in accordance with her mental reactions. It is my routine procedure to find out what the two of us have in common, whether it be books, bridge, dogs or what not, then we feel we know each other. She will be full of questions, some reasonable, some otherwise. Answer them to the best of your ability, and get a careful family history, with special reference to her mother's deliv-

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eries. Then obtain her past and present history. Tell her what you will expect of her and what she may expect of you; take her blood pressure and weigh her. She will want to know something of the cost of her coming event; explain your charges to her and insist upon her husband coming to see you, for it is much easier to talk business with a man than a woman. Unless there is something urgent to attend to, ask her to return within a week for a complete physical examination. The ice is now broken and she has found out that you are a fellow she can talk with and that really there is nothing to be frightened about.

During the second visit, a complete physical examination must be made. This should be a very careful and meticulous examination, for during pregnancy all of the organs of the body will carry an extra load, and a faulty one will surely crack, as pregnancy progresses. So make this examination well; it is not only good for your soul, but is very convincing to the patient, for gone are the days of a prescription without an examination. This examination should include pelvic measurements, urinalysis, complete blood counts and a Wassermann if possible.

Now you are in position to advise her concerning her general health, mode of living and diet. Advise and prescribe for any physical ailment she may have. I find it important to keep the total gained weight down to below twenty-five pounds. This is generally easy to do if you can get your patient to eat only three times a day, a well balanced diet, with a limitation of sweets and fats. Her gain in weight every two weeks will tell you if she is fudging. I will not dwell upon the correction of dental caries and other conditions which may arise as pregnancy progresses, for I am sure you gentlemen are better qualified and more experienced along those lines than I.

See her every ten to fourteen days and it will be much nicer for you, and greatly appreciated by your patients, if you will set aside one day, or a part of a day, on which to see your expectant mothers. In a kind and gentle way let her and her relatives understand that you alone are boss, for this will save you many minutes of listening to numerous people who have

something confidential to tell you concerning her case.

When friend hubby makes his appearance, go over the financing of the expected event very carefully, making every allowance for his ability and willingness to pay; tell him what you expect, and that these conditions must be met. This, too, will save you time and worry in the future. I find it an excellent plan to have them pay a certain amount every two weeks. In other words, have the young lady bring some money along with her specimen of urine, and she should, for you are giving your time, and you are entitled to your pay. You will find that this commands respect, and that you will unconsciously give her more time and consideration. Never let them talk you into waiting until delivery is over. The above plan makes it easier for them, and certainly better for you. Pay patients are easier to handle.

Now get down to brass tacks with the young man, and talk to him about the changes he may expect in his wife's mental and physical make-up during pregnancy, some he must allow for, and others he must help you correct. Then discuss the problem of intercourse, for believe it or not, this is very important. I advise them to have intercourse during pregnancy until the latter months, not only will most of them want to, but it saves me the embarrassment of opening Bartholin abscesses during the latter part of pregnancy, and makes for happier homes.

Now along about the sixth and one-half month you are ready to make your diagnosis, as to position and presentation, remembering that these change often as pregnancy progresses. This is easily done, if you will give a little of your time, and it will be very convincing to your patient. They get a kick out of having you listen to the fetal heart. I will not discuss the procedure of making a diagnosis of position and presentation, for it can be found, along with pictures and diagrams, in any standard book of obstetrics.

Now suppose you discover that she has a transverse or breech presentation; keep it to yourself, as these conditions have been known to right themselves. Examine her carefully each time she comes in, and

make notes as to any change in the position of the fetus. After the seventh and one-half month if the fetus has not righted itself, you can rest assured that it will not. Here it is my customary practice to do what is called an external version. What do we mean by version? We mean a maneuver which changes the polarity of the fetus, with reference to the mother. The object being to change an abnormal or relatively abnormal relation into a normal one.

I realize I am discussing a subject that most of you gentlemen have forgotten, as very little is said about external versions in the medical schools, post-graduate courses or books. I am not advising you to follow my teachings, but I believe that as soon as the medical profession realizes the difference in the fetal mortality of a cephalic and breech delivery, and that an external version can be done easily, I am sure the fetal mortality will be lowered fifteen per cent. This is a procedure which any of you gentlemen can learn to do easily and safely anywhere. For the next few minutes I would like to discuss the difference between cephalic and breech presentation, and why I prefer to convert a breech into a cephalic presentation.

First: The maternal mortality is higher in breech cases, the reasons being labor is longer and internal examinations more frequent, both increasing the dangers of infections. Effacement and dilatation of the cervix are not so perfect, hence lacerations are more common. Since the head comes rapidly through the unprepared pelvic floor, rupture of the perineum is frequent, extending often through the rectum. Disturbances of the mechanism of labor are frequent, and since they demand the introduction of the hand or other operative procedures, the prognosis for the mother is doubtful. Post partum hemorrhage is increased. Most of these dangers can be eliminated by converting a breech into a cephalic presentation.

Second: In breech presentations the fetal mortality ranges from fifteen to thirty per cent in the best hands. This includes both primiparas and multiparas.

Indications for doing an external version: Any transverse or breech presentation.

Contra-indications: Twins, monstrosities, and placenta previa.

Dangers: Rupture of the uterine wall, separation of the placenta, induction of labor. These things I believe can happen during an external version, but which can be avoided by careful and gentle manipulations.

In order to do an external version the following conditions must be present:

1. Confidence of your patient. Explain how and why you are going to turn the baby, and assure them it will not be painful, and that it will not harm the baby.
2. The fetus must be movable; in other words there must be plenty of liquor amnii, and the abdominal walls must be relaxed.

Procedure: Have the patient report to your office or hospital in the morning without any breakfast. Give her some of the mild barbiturates to quiet her nervous system, place her in bed with the foot elevated for thirty to forty minutes. Then give her one-fourth grain of morphine hypodermically and place her on a table in Trendlenburg position for thirty minutes, or until you are certain the anterior abdominal wall is relaxed. Then locate the fetal head, breech and back. One hand is placed on the breech, the other over the head, and by alternate stroking and pushing movements the head is guided downward, while the breech is coming up. I use the ball of my thumb, as it seems to hold the fetal head easily and I am sure of not making much pressure. Take plenty of time and do not use much effort. As the fetus begins to move, you will notice that the uterine ovoid which was longitudinal with the long axis of the mother, will begin to appear as transverse, and as the maneuver is continued you will notice the uterus shorten and widen. Here is where you must be very slow and careful, and soon you will no longer feel the fetal head, as it suddenly drops into the mother's pelvis. Now elevate the head of the table and palpate the fetus, and you will find the head in the pelvis, the breech in the fundus and the fetal heart tones in the lower quadrants. Occasionally I have had to rotate the fetus in the opposite direction, that is, bringing the

breech up towards the face of the fetus. Then begin to push the head and shoulders downward in the opposite direction, but the first maneuver is generally the easier one. This is found in the text books as Weigand's version and is usually in small print at the bottom of the page. After you are sure the fetus has been turned, have the mother stay awhile, then she may return home, with the instructions to stay in bed the remainder of the day, and to call you if she has any backache or cramp-like pains in the abdomen, in which case give her some opiates, but you will find this unnecessary in most cases. This has been my procedure for some seven years and I have never had any reason to change. Up to date, all of the versions have turned out as cephalic presentations with normal delivery with one exception, a young lady with a slightly contracted pelvis, who required a low-forceps. Here I am sure I saved a baby's life for I feel sure, had it remained a breech, and had the after coming head without any chance to mould, been pulled through this pelvis, a fatality would have resulted.

I have been unable to do a version in

only one case, this being due to lack of fluids and a tight abdominal wall. In other words, I could not do a version easily so I quit.

To illustrate how you may convert a chaotic situation into happiness, I just recently had a lady who had lost two babies, both breech cases, in the hands of two competent men. This last pregnancy was also a breech which I converted into a cephalic presentation at the eighth month. She came into the hospital after she had been in labor three and one-half hours. There was complete dilatation, bag of waters still intact and the head was floating. I was afraid the inlet was too small for the head but I let her labor and the head gradually moulded and five minutes after the head engaged she delivered.

I would like to show you a few x-rays taken before and after version. I do not x-ray all of my patients, as it is too expensive. I do this sometimes to check my findings and to grandstand with the patients or relatives. After I have shown these I would appreciate a discussion and will try to answer any questions. I believe this subject worthy of thought and I welcome constructive criticism.

INTRA-NASAL OXYGEN THERAPY*

H. K. SPEED, M.D.
SAYRE

History: The subject in question is one that I feel has been very much neglected. Oxygen as a therapeutic agent has been employed for many years. Until recently, the last three or four years, the method of application has been too bunglesome and expensive to be of any great value except in liberally endowed institutions.

It was, I believe, first used by means of an oxygen chamber which cost from three to five thousand dollars per unit, and later by an oxygen tent, many models of which are on the market, all of which

are rather expensive, both in the initial equipment and in the use of oxygen. Too much detail of a technical nature is required to maintain a person in either of these above mentioned methods.

Administration: The simplest way to administer oxygen is by a small caliber, ten or twelve French gage, rubber catheter inserted into the nostril about four and a half to five and a half inches from the alae of the nose. It is passed back to where it is visible behind the uvulae and then withdrawn just out of sight. The catheter is then fastened by adhesive straps to the surface skin of the face.

The apparatus for this administration

*Read before the Section on General Medicine, Annual Meeting, Oklahoma State Medical Association, Enid, April, 7, 1936.

can be made by any country doctor with a little bit of effort and an outlay of about two dollars' expense. Any welding establishment, one of which can be found in any county, handles pure commercial oxygen. For the dispensing of its contents there is a special gage, several types of which are available at a cost of from ten to fifteen dollars, that will regulate the flow as desired.

The oxygen is conveyed through a rubber tube into a gallon bottle nearly filled with water. The oxygen is released under water through the glass tube to insure saturation of the gas with moisture. This bottle is connected from above the water to a second bottle containing no water, through which the gas is passed to remove any excess of moisture, making certain that free liquid will not be carried into the patient's lungs.

A glass tube from the second bottle is connected to a rubber tubing which is likewise connected with the soft rubber catheter in place in the patient's nostril.

Care should be taken not to connect the gas with the catheter until the desired flow is started for fear there will be too sudden flow of gas when it is turned on. It should be regulated so that there will be just short of a continuous stream through the water. In other words, a constant flow of bubbles of oxygen through the water in the first bottle.

Concentration: This amount will give the patient from four to six litres per minute, which has been found to be about the proper amount for the best results. To get proper therapeutic effects the patient must receive in the neighborhood of about thirty-five per cent or more oxygen in the air. Anything under thirty per cent seems to be of practically no therapeutic value.

By the above method it is found by a careful test that from thirty-five per cent to even as high as seventy-four per cent oxygen can be delivered to the patient's pharynx. Of course, for a seventy-four per cent delivery there must be liberated something like fifteen litres per minute, which is excessive and unnecessary.

Wisconsin General Hospital: We by no

means claim any originality of this method. It was brought to me by my son who interned in the Wisconsin General Hospital, Madison, where it is extensively used. In fact, they have one hundred and twenty-eight rooms in their hospital piped for oxygen which is used exclusively by this method.

Many of you gentlemen will, no doubt, remember Dr. Waters, chief anesthetist of that hospital, who demonstrated this same type of apparatus before the Oklahoma City Clinical Society last fall.

Uses of oxygen:

1. Makes breathing easier and gives more comfort thereby.
2. Slows pulse and respiration and lowers temperature in fibrile cases.
3. Increases arterial oxygen saturation and relieves cyanosis.
4. Often prolongs life until immunity can be built up to make recovery possible.

Most common failure in oxygen therapy where otherwise success could be had:

1. Procrastination in beginning the medication.
2. Improper administration.
3. The expense attached thereto.

Procrastination: In the first instance you should not expect much relief from the administration of any therapeutic agent in a moribund patient. Therefore, begin your oxygen early when the pulse rate or respiration becomes accelerated. And, if possible, before cyanosis appears. If you are not able to begin it before cyanosis appears, begin it as soon as possible thereafter.

Improper administration may be had by the catheter being placed too far down in the pharynx, causing irritation. Or not far enough down, causing escape of the gas, or an improper or not sufficient flow of gas from the tank.

Expense: The expense is not a big item. The average container, which costs five dollars, ordinarily will last five days. It is seldom necessary to continue its use more than the length of time it will take to empty two tanks.

Oxygen therapy is especially useful:

1. Pneumonia, both lobar and bronchial.
2. Post-operative collapse of the lung.
3. Asthmatic paroxysms until other therapeutic agents can take effect.
4. Atelectasis of the newborn.
5. Emphysema.
6. Fibrosis of the lung with acute oxygen want.
7. Asphyxia of any kind, especially if used with carbon dioxide.
8. Congestive heart failure.
9. Coronary thrombosis and angina pectoris.

Pneumonia: We feel as if the greatest field for oxygen therapy by the nasal catheter method is in pneumonia, because we have that widespread over all the country and in the hands of many men who do not have access to a hospital. We feel as if many lives can be saved from this dreadful disease if one of these simple apparatuses could be put in the hands of every practitioner in the country.

During the last two years my son and I, in our private practice, have treated some forty cases of pneumonia by this method. We have found that almost invariably after beginning the administration of oxygen the temperature, pulse, and respiration are materially reduced. If the patient is cyanotic, but not moribund, the cyanosis almost invariably disappears within a short time. The patient will tell you within a few minutes that he feels better.

Some clinicians say that oxygen should be begun when cyanosis is evident and continued in sufficient concentrations to keep the finger nails pink. Our experience, and that of many men who have had vastly more experience, is that it should be given before there is an onset of cyanosis and anoxemia, which is evidenced by high temperature, rapid pulse, and increased respiration.

The pulse rate should be a better index than cyanosis for the amount or time to begin oxygen. After cyanosis has developed, much more damage has been done.

When the discontinuance of oxygen is anticipated, it should be brought about gradually. Otherwise there is likely to be a severe reaction as evidenced in mountain sickness where going from a low to a high altitude. In cases where the heart has been materially impaired this might even prove fatal. Also the temperature, pulse, and respiration are likely to rise again.

Coronary occlusion: In acute coronary occlusion or any congestive heart failure where there is cyanosis and dyspnoea, it will often tide the heart over until it can be adapted and regain its equilibrium.

Chronic cyanosis: It should not be used for the mere fact that there is cyanosis. To do so may produce in the patient an intolerance for its discontinuance.

Angina: In anginal pains where the cause is general and not localized in a small area of the heart muscle, the pain is very readily relieved. If it is not readily relieved you may be certain that it will not be benefitted by oxygen therapy.

Asthma: Where the paroxysms are severe inhalations of oxygen in a concentrated form will often give almost immediate relief, thereby making the patient comfortable until other therapeutic agents can be employed.

Asphyxia: In an obstruction of the air passage as by a foreign body or laryngeal diphtheria, death often comes from air hunger which seems out of proportion to the obstruction, or the infection in laryngeal diphtheria. Oxygen therapy is very useful in these cases if used before the resistance is broken down.

I believe no one claims a specific therapeutic action for oxygen therapy. It acts somewhat like glucose in maintaining the resistance, especially in edema of the lungs and anoxemia, which, if left alone, will further break down the resistance. By a liberal use of a concentrated flow of oxygen it has been many times demonstrated that this resistance can be redeemed until the body can build up sufficient immunity to the toxins to prolong and save life.

THE JOURNAL

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EDITORIAL

AN IMPORTANT RESPONSIBILITY

The most important responsibility that faces the membership of the Oklahoma State Medical Association at this time is the meeting of the allotment that was made by the action of the House of Delegates on each County Medical Society amounting to \$10.00 per capita.

This money, as you know from a letter recently published by the Legislative Committee, is to be used for Legislative purposes. The Legislative Committee has recently opened headquarters in room 601 Ramsey Tower Building, Oklahoma City, and Mr. Jess Harper, the Executive Secretary of this Committee, is in charge of these headquarters. Office rent, executive's salary, stenographer's salary, post-

age, stationery, *et cetera*, is now a more or less fixed charge against this fund and will amount to approximately \$500 or \$600 each month, consequently the money must be available to meet this expense which is being incurred by this Committee, by your direction. The doctors of this State said very plainly, by their action in the House of Delegates at Enid, that they demanded activity upon the part of the Legislative Committee and instructed them to use every effort to see to it that a new Medical Practice Act and Basic Science Law were passed by the next Legislature. The Legislative Committee is making every effort to carry out this mandate of the House of Delegates and now it is the duty of the membership to furnish the funds in order that this purpose may be accomplished.

If your County Society officers are not awake to the necessity of this, each member should see to it that immediate action is taken by their County Society and that this allotment is paid in full.

I am taking the liberty of publishing this editorial as an adjunct to the request made in the last issue of THE JOURNAL by the Legislative Committee and I will ask each doctor to feel that this is his job and that his job has not been accomplished until he and every member of his County Society has contributed the allotment made by the House of Delegates.

HIGHWAY FIRST AID STATIONS

The plan for highway first aid stations, which was first promulgated by the Fracture Committee of the American College of Surgeons and later adopted as a major activity of the American Red Cross, should receive not only the endorsement but the full cooperation of County Medical Societies.

The expense of these units is met by the local Red Cross Chapter and amounts to but a few dollars for standard equipment. The location of the units is determined by a Committee appointed by the Chairman of the local Red Cross organization and are usually placed at filling stations, tourist camps or rural stores where the services of a physician are not readily available.

It is required that the personnel of these aid stations take a fifteen hour course of instruction comprised of splint application, hemorrhage control, artificial respiration, *et cetera*, this course to be under competent direction and the applicant at the termination of the course must submit to an examination and demonstrate his efficiency.

These units also will have at hand information as to procuring medical attention, ambulance service and hospitalization in order that prompt disposition may be made of all emergency cases.

There is no question but what the installation of these units throughout the state will materially decrease both morbidity and mortality and the County Medical Society will be meeting its obligation to the traveling public by contacting the officers of their local Red Cross Chapter and giving their support to the carrying out of this very important program.

INSURANCE MEDICAL DIRECTORIES

The attention of all members is called to the following resolution adopted by the Arkansas Society at the Hot Springs meeting April 29, 1936:

"WHEREAS, certain commercial interests are publishing medical directories, listing physicians by specialty and otherwise, as available for insurance and compensation work, and other professional services, and

"WHEREAS, participation by listing in these lay publications merely serves for the profit of promoters, and is furthermore technically indirect solicitation of patients.

"THEREFORE, BE IT RESOLVED, That the Arkansas Medical Society condemns these practices as unethical and forbids its members to continue listing their names in such directories, and

"BE IT FURTHER RESOLVED, That the Arkansas Medical Society requests the House of Delegates of the American Medical Association to take similar action."

The resolution was presented to the House of Delegates of the American Medical Association and referred to the Judicial Council for study. The Judicial Council approved the resolution and recommended its adoption, which the House of Delegates did at the session of May 14, 1936.

The attention of our members has been previously called to the activities of these directory publishers. As is often the case, individual physicians felt that they might incur a loss if they removed their names from such directories while other members retained their listing. With this thought in mind, the above resolution has been adopted. The practice of so listing is declared unethical; no individual member may now feel that should he remove his name that another physician will accept that listing. The benefit is direct to these physicians in the fees saved; the loss is entirely the promoter's.

Some idea of the financial gains involved in the publication of these directories may be understood when we state that one directory now on our desk

contains the names of approximately five thousand physicians. Ninety-two Arkansas physicians are listed in the three directories available to The Journal. The fee charged for listing in this one directory is \$15.00 per annum. A liberal estimate of the cost of publication and distribution is \$15,000. The balance, \$60,000, is presumably divided between the promoter and his solicitors. Verily, a most altruistic motive prompts the publication.

THE AMERICAN BOARD OF INTERNAL MEDICINE (INC.)

The American Board of Internal Medicine, incorporated February 28, 1936, completed its organization on June 15, 1936. The officers chosen were Walter L. Bierring, M.D., Des Moines, Chairman; Jonathan C. Meakins, M.D., Montreal, Vice-Chairman; and O. H. Perry Pepper, M.D., Philadelphia, Secretary-Treasurer. These officers with the following six members constitute the present membership of the Board: David P. Barr, M.D., St. Louis; Reginald Fitz, M.D., Boston; Ernest E. Irons, M.D., Chicago; William S. Middleton, M.D., Madison; John H. Musser, M.D., New Orleans; and G. Gill Richards, M.D., Salt Lake City.

The purpose of the Board will be the certification of specialists in the field of internal medicine, and the establishment of qualifications with the required examination procedure for such certifications.

The first written examination will be held in December, 1936, and candidates successful in this written test will be eligible for the first practical or clinical examination which will be conducted by members of the Board near the time for the annual session of the American College of Physicians at St. Louis in April, 1937. The second practical examination will be held at Philadelphia near the time of the annual session of the American Medical Association in Atlantic City, June, 1937.

The fee for examination is forty dollars which must accompany the application and an additional fee of ten dollars is required when the certificate is issued.

Application blanks and further information can be obtained by addressing the office of the Chairman, Walter L. Bierring, M.D., 406 Sixth Avenue, Des Moines, Iowa, U. S. A.

Editorial Notes—Personal and General

DR. W. K. HAYNIE, Durant, is now associated with his father, DR. JOHN A. HAYNIE, in the practice of medicine.

DR. SAMUEL R. CUNNINGHAM, 64 years old, widely known Oklahoma City surgeon, died September 7th in St. Anthony Hospital after a brief illness. He lived at 323 Northwest Nineteenth street.

American Board of Obstetrics and Gynecology Examination in November

The next written examination and review of case histories of Group B applicants by the American Board of Obstetrics and Gynecology will be held in various cities in the United States and Canada on Saturday, November 7, 1936.

Application blanks and booklets of information may be obtained from Dr. Paul Titus, Secretary, 1015 Highland building, Pittsburgh (6), Pennsylvania. Applications for this examination must be filed in the Secretary's office sixty days prior to the scheduled date of examination.

LEGISLATIVE FUND

County	Allotment	Amt. Paid
Adair	\$ 40.00	
Alfalfa	70.00	
Atoka-Coal	30.00	\$ 10.00
Beckham	140.00	130.00
Blaine	90.00	
Bryan	240.00	110.00
Caddo	240.00	
Canadian	230.00	
Carter	260.00	
Cherokee	30.00	
Choctaw	70.00	60.00
Cleveland	270.00	
Comanche	190.00	
Cotton	90.00	
Craig	150.00	80.00
Creek	330.00	185.00
Custer	230.00	210.00
Garfield	420.00	
Garvin	150.00	
Grady	230.00	160.00
Grant	40.00	
Greer	110.00	
Harmon	80.00	
Haskell	60.00	40.00
Hughes	170.00	
Jackson	160.00	100.00
Jefferson	110.00	
Johnston	10.00	
Kay	330.00	220.00
Kingfisher	90.00	
Kiowa	170.00	
Latimer	40.00	
LeFlore	160.00	100.00
Lincoln	150.00	30.00
Logan	200.00	
Major	30.00	
Marshall	50.00	
Mayes	110.00	20.00
McClain	60.00	
McCurtain	70.00	
McIntosh	60.00	50.00
Murray	110.00	
Muskogee	520.00	10.00
Noble	40.00	
Nowata	50.00	
Okfuskee	150.00	
Oklahoma	2740.00	955.00
Okmulgee	320.00	
Osage	220.00	140.00
Ottawa	310.00	
Pawnee	100.00	90.00
Payne	250.00	140.00
Pittsburg	350.00	170.00
Pontotoc	300.00	290.00
Pottawatomie	330.00	140.00
Pushmataha	80.00	
Rogers	120.00	
Seminole	320.00	
Sequoyah	10.00	
Stephens	220.00	
Texas	50.00	
Tillman	100.00	
Tulsa	1980.00	
Wagoner	40.00	
Washington	250.00	210.00
Washita	120.00	
Woods	190.00	140.00
Woodward	260.00	140.00

NOTE—Corrections and additions to the above list will be appreciated.

Program for Post-Graduate Course on Tuberculosis

The following program has been announced for the Post-Graduate Course on Tuberculosis which will be given Tuesday afternoon and evening, September 29, 1936, in Tulsa, Oklahoma.

1:15—Home Management of Childhood Tuberculosis, Dr. F. P. Baker, Superintendent Eastern Oklahoma Tuberculosis Sanatorium, Talihina.

1:50—Discussion—Dr. Will C. Wait, Superintendent, Western Oklahoma Tuberculosis Sanatorium, Clinton.

2:05—Procedure in Finding Source of Contact in Children Showing Reaction to the Tuberculin Test, Dr. L. J. Moorman, Oklahoma City.

2:40—Discussion—Dr. O. A. Flanagan, Tulsa.

2:55 Manifestations of Early Tuberculosis and X-ray Interpretations, Dr. R. M. Shepard, President, Oklahoma Tuberculosis and Health Association, Tulsa, Oklahoma.

3:30—Discussion—Dr. R. M. Burke, Soldiers' Hospital, Sulphur.

3:45—Importance of Tuberculin Tests and X-ray in Childhood and Youth, Dr. J. D. Riley, Superintendent, Arkansas Tuberculosis Sanatorium.

4:30 to 5:30—Clinics and Questions.

Public Meeting—7:30 to 9:30

Address—Tuberculosis: Its Relation to the Community, Dr. J. D. Riley.

Moving Pictures—Tuberculosis and How It May Be Avoided. (One reel, silent. A scientific explanation emphasizing childhood type of tuberculosis.)

Story of My Life by Tee Bee. (One reel, silent. Animated cartoon and photographs of actual scenes. The germ of tuberculosis tells his life story to Prof. Buzzle, who has discovered how to talk to germs.)

Contacts. (Two reels, sound. Search is made among members of a household for the source of tuberculosis infection.)

Behind the Shadows. (One reel, sound. A doctor explains what tuberculosis is. As he speaks off-stage, pictures, X-rays and animated diagrams illustrate his story.)

We again urge you to make your plans to be in Tulsa on September 29. (Note the change in date.) The speakers and their titles indicate the high type of program that will be presented. The films to be shown cover the subject of tuberculous infection and disease carefully with clear illustrations and explanations. Also, they tell you the type of public education promoted by tuberculosis associations, thus being particularly helpful to doctors in discussing these problems with their patients.

CARL PUCKETT, M.D., Managing Director,
Oklahoma Tuberculosis and Health Association.

The Antagonistic Effect of Metrazol to Shock and Anesthetic Depression

Karl Schlaepfer (Anesth. and Anal., 15:202-206, July-August, 1936), calls attention to the desirability of having some preparation on hand which would tend to restore normal cardio-respiratory function when shock or anesthetic depression occurs in surgical cases. Metrazol satisfies these requirements by its prompt, direct action, without an over-stimulation of the circulation or respiration.

Since surgery is necessary in a great many patients who are "bad surgical risks" and it is desirable in other cases to shorten the period of post-operative depression, the effect of Metrazol was studied in both types of cases. In the first group, one or two cc. Metrazol were usually given

both pre- and post-operatively at intervals of one to two hours. Normal saline and glucose were used in conjunction with Metrazol in a number of these cases and "often desperate cases responded to this combined treatment by lowered pulse rate and the respirations would become deeper and less frequent." The rapidity of the improvement could be regulated by shortening the intervals between the injections of Metrazol.

In the second group of cases, two cc. of Metrazol were given slowly, intravenously immediately after the operation if it was desirable to have the patient awaken within the first hour. This was followed by a second dose within a half-hour which would bring about slow, complete awakening. When it

was not necessary to obtain the prompt awakening which follows the intravenous injection of Metrazol, but merely to shorten the period of post-operative depression, one dose of two cc. of Metrazol was injected intramuscularly.

In summarizing his results Schlaepfer states: "Metrazol is a useful adjunct to the surgical care of debilitated patients, to prevent or to overcome shock. In patients given avertin as a basal or complete surgical anesthetic Metrazol gives a striking effect. The period of post-operative hypnosis can be shortened to about one-fourth of the time usually noted."

Information on Metrazol can be obtained from the Bilhuber-Knoll Corporation, Jersey City, N. J.

OBITUARIES

DOCTOR M. L. PERRY

Dr. M. L. Perry was born in Troy, Alabama, in 1870, and with his parents moved to Greenwood, Arkansas, when a mere youth, his father later dying and leaving him, a widowed mother and two younger brothers. He being the eldest, the mantle of responsibility was at once his banner and guide and he fell to his task like a true soldier. Like the average family of very moderate means, they were confronted with sickness, troubles, and disappointments; stung by that embarrassing handicap of financial aid and security in securing the wants and necessities of life. His heart being burdened by seeing his loved ones in their hours of affliction and sickness and admiring as idol gods the kind, sympathetic, friendly, loving old character known as the family physician as they administered unto them. They inspired him with the zeal and determination of the American youth, that if his Creator would be kind enough to allow him to reach maturity and manhood, he would like to dedicate his life and service in administering and alleviating the pain and suffering of his fellowman in his hours of affliction and sickness. This privilege being granted him, he left the farm, the plow, and the old mule, saying: surely life held a better prospect for him.

In those days young, inspired medical prospects could go into the offices of the practicing physicians and study as the law student did, using the practicing physician as a preceptor, until they reached the supposed-to-be stage of qualification when they could go before a county examining board and secure a certificate permitting them to practice medicine. And this was his route—but he soon saw that the foundation upon which he stood was not firm enough; so with his wife and children, he pushed steadily onward, practicing a year, and going to school a year, until finally he secured that cherished parcel or sheet of paper of which all medical students dream and build air-castles around, their sheepskin, from the College of Physicians and Surgeons, Dallas, Texas, in 1906. He pioneered in the Indian Territory

at Bokoshe, later in Arkansas—moving from Greenwood, Arkansas, in 1915, to Tulsa, believing it held better prospects for him and his boys that he might better educate and provide for them.

During the World War when most of the younger men were in service, his practice grew to the point that he felt that he had to have a partner; naturally the call went to his brother, Dr. J. T. Perry, who preceded him in death about six years.

Dr. M. L. Perry has two sons that followed his footsteps in the practice of medicine, Dr. John C. Perry of Tulsa, and Dr. James Sidney Perry of Bryan, Texas, both having been graduated from the University of Oklahoma. At the same time Dr. J. T. Perry had two sons studying medicine at the Oklahoma University, and after his death a third one. In all, five Perry boys graduated in medicine from the University of Oklahoma, probably more by the same name and relation than is recorded in any other medical school. All was made possible by his influence and determination to make things better for all, by moving into a field that proved to have better financial possibilities and opportunities.

Dr. Perry was one of the founders and builders of the Immanuel Baptist Church and contributed heavily to its support. He was a thirty-second degree Mason and a Shriner, and a member of the Tulsa County Medical Society until his retirement from active practice on account of failing health.

The biography of all good men is a beautiful revelation when once told and in their departing leaves only that; and another footstep on the sands of time.

What greater heritage can a father bequeath his sons than a life well lived?

With the ductums I have fought a good fight; I did the best I could. I have finished my course. I have tried to push forward in the high calling of my profession—do likewise.

Surely, the Portals of eternity will be blest by the entrance thereof of such simple and sublime souls.

(A tribute of a son to his father, by John C. Perry, M.D.)

ABSTRACTS : REVIEWS : COMMENTS and CORRESPONDENCE

ORTHOPAEDIC SURGERY

Edited by Earl D. McBride, M.D.
717 North Robinson Street, Oklahoma City

Injuries to the Crucial Ligaments of the Knee Joint. Henry Milch. *Soviet Surgery*, X, 101, 1935.

After a thorough analysis of the physiology of knee motion and the role played by the crucial ligaments in this motion, the author gives a historical description of the surgical treatment of injuries to the crucial ligaments and a critical analysis of these operations. Citing examples from an extensive literature and basing his conclusions on his personal experience, the author finds that the importance of the crucial injuries is exaggerated, and that the chief offender in the loss of stability in knee injuries is the medial collateral ligament. The presence of an extensive tear of the crucial ligaments does not require their surgical restoration. The repair of the medial collateral ligament, which may be torn in early cases or weakened in old cases, is all important. The repair is accomplished by a restoration of this ligament with a fascia-lata transplant.

Rarefaction Osseuse Post-Traumatique (Post-Traumatic Rarefaction of Bone). Jean Baumgartner and Francis Berthoud. *Presse Med.*, XLIV, 495, March 21, 1936.

Attention is called to the fact that, since the work of Leriche, the osseous system has come to be considered as a large reservoir of readily mobilizable calcium. Osteoporosis, the evidence of this mobilization of calcium, is the result of a prolonged hyperaemia, due to vasomotor imbalance which may be caused by traumatism or infection. The exact mechanism of the prolonged action of trauma has not been explained, except upon the basis of vasomotor instability. In this connection, the authors report the case of a young woman who had been subjected to bilateral oophorectomy eight years before the onset of trouble in the ankle and knee joints. The roentgenograms, which were examined by Leriche himself, suggested a post-traumatic osteoporosis with fracture. In view of the earlier operative intervention, homovarine (Byla) and tricalcine were given hypodermically daily, and later at longer intervals, for a period of three months. The disappearance of the lacunar defects under this therapy led the authors to the opinion that trauma plays a secondary or precipitating role in the development of osteoporosis, while the primary role is taken by some endocrine disturbance. They call attention to a communication by Leriche, who suggested injections of ovarian extract in the treatment of traumatic osteoporosis of the knee.

Four Cases of Ewing Sarcoma in Ribs. Hilding Bergstrand. *Am. J. Cancer*, XXVII, 26, May, 1936.

The author is convinced that Ewing's sarcoma of the rib is not extremely rare. The tumors origi-

nated in the sixth and eighth ribs in the back, and tended to grow into the pleural cavity, pushing the pleura ahead of them. They were coarsely lobulated tumors with their greatest length along the ribs. The roentgenograms showed a characteristic increase in density and volume of the ribs, with spicule formation. One of the patients, treated by operation and x-ray, is apparently free from disease over five years after operation, although pulmonary metastases were observed two years after operation. The author points out that this tumor occurs in those parts of the skeleton in which ossification begins toward the end of the second month of foetal life, and suggests that they may derive from the blastema cells of the mesenchyma. The paper is illustrated with roentgenograms and photomicrographs and reviews briefly the literature on the histogenesis of these tumors.

INTERNAL MEDICINE

Edited by C. E. Bradley, M.D., Medical Arts Building,
Tulsa; Hugh Jeter, M.D., 1200 North Walker,
Oklahoma City

By HUGH JETER, M.D.

Blood: A Review of the Recent Literature. Raphael Isaacs, M.D., Cyrus C. Sturgis, M.D., Frank H. Bethell, M.D., and S. Milton Goldhamer, M.D., Ann Harbor, Mich. *Archives of Internal Medicine*, Vol. 57, No. 6.

DEFINITE DISEASES OF THE BLOOD POLYCYTHEMIA

Adams emphasizes the tendency to bleed easily as well as the splenomegaly as important symptoms. In his group of cases every patient subjected to surgery suffered from post-operative hemorrhage.

Langer postulated that polycythemia is due to an imbalance of the vegetative nervous system and irradiated the paravertebral ganglions, getting a decrease in the red blood count. Nisbet also advocated roentgen treatment.

Wilbur and Ochsner found twelve cases of peptic ulcer in 143 patients with polycythemia.

Lunedei and Liesch attributed polycythemia and gastroduodenal ulcer to diencephalic hypofunction. Beyne, Binet and Strumza think that anoxemia is a primary feature and that polycythemia is of respiratory origin.

Reznikoff, Foot and Bethea concluded that "the vascular changes, especially in the capillaries of the bone marrow in polycythemia vera patients, suggest the possibility that these lesions may result in anoxemia of the bone marrow with compensatory or excess compensatory polycythemia."

Reimann and Breuer report good results from venesection, 300 to 400 cc. of blood twice weekly. Briggs and Oerting produced a remission by gastric lavage from four to six times daily.

Tyler and Baldwin produced polycythemia in rats by exposing them to atmosphere in low oxygen for two to fifteen days.

PURPURA HAEMORRHAGICA

"Many etiologic factors may cause purpura, and various forms have been classified. The clinical value of these complex classifications is somewhat doubtful. The degree of bleeding is determined by three factors: (a) the platelets, (b) the permeability of the capillaries, and (c) the plasma. The diminution in the number of platelets may be due to a deficient formation in the bone marrow or to increased destruction by the reticulo-endothelial system (primarily the spleen). The disturbance of formation of the platelets in the bone marrow has been ascribed to a hormonal deficiency, resulting in the failure of the megakaryoblasts to mature. The decrease in the number of platelets is thought by some to be the result of hemorrhage rather than the cause, the thrombocytes being withdrawn from circulation and fixed in the bleeding areas as a defense mechanism."

Splenectomy, although usually associated with remarkable improvement in cases of thrombocytopenic purpura, may also be of no benefit. If the spleen is overactive and destroys the platelets in excess numbers, its removal is indicated however, if the decrease in the number of thrombocytes is the result of a disturbance in the production of platelets in the bone marrow, splenectomy is of little value. Because of the high mortality rate associated with splenectomy, ligation of the splenic artery has been recommended as a substitute. High protein and high fat diets are advocated. Viosterol and halibut liver oil are thought to be of no value. Snake venom has been employed in many instances with conflicting reports as to its value.

A most comprehensive review concerning the theories of blood coagulation, has been recently published by Howell.

EYE, EAR, NOSE AND THROAT

Edited by Marvin D. Henley, M.D.
911 Medical Arts Building, Tulsa

Circulation of the Aqueous. V. Mechanism of Schlemm's Canal. Jonas S. Friedenwald, M.D., Baltimore. *Archives of Ophthalmology*, July, 1936.

Other experiments of the author and associates are summarized by him as follows: "The reabsorption of water, of crystalloids and of colloids from the anterior chamber is in each instance effected by a separate and essentially unrelated mechanism. Colloids are removed by active phagocytosis on the part of the anterior layer of the cells of the iris, the endothelium. The removal of proteins is facilitated by the presence of proteolytic enzymes in the aqueous and the surrounding tissues. Crystalloid exchange takes place between the anterior chamber and the blood vessels of the iris by diffusion. The velocity of approach toward equilibrium in crystalloid content between the blood and the aqueous is controlled by the area of the iris (i. e., the state of contraction or dilatation of the pupil) and by the degree of hyperemia of the iris. In smaller part, some of the crystalloids of the aqueous are carried out of the anterior chamber along with the reabsorbed water."

It has been shown that the reabsorption of water takes place almost entirely in the anterior chamber and therefore only the vessels of the iris and Schlemm's canal need be considered in estimating the mechanics of the action. It also has

been shown that the congestion of the anterior ocular vessels tended to facilitate the reabsorption of water. It was concluded that the iris plays only a small part in the intra-ocular fluid exchange. By exclusion it was then concluded that Schlemm's canal played the principal part in the mechanics of the reabsorption of water.

The work of Duke-Elder, Maggiore, Sondermann and Theobald is critically discussed. Many photographs portraying various interesting points in connection with his work accompany the article.

The author's summary and conclusion follow: "Schlemm's canal is not connected with the anterior chamber by any open channels or pores. It is connected with the intrascleral vascular plexus at the limbus by both efferent arterioles and efferent venules, the latter about four times as numerous as the former. The effects of a continuous flow of plasma from the afferent arteriole into the canal and of the dilution of the plasma within the canal with water osmotically attracted from the anterior chamber are discussed. It is shown that, within limits, an increase in the flow of plasma into the canal leads to an increase in the rate of absorption of the aqueous and a lowering of intra-ocular tension. Similarly a reduction in the flow of plasma into the canal would be expected to lead to a decrease in the rate of absorption of the aqueous and a rise in the intra-ocular tension. It is suggested that in some cases of chronic simple glaucoma the primary lesion may be a sclerotic occlusion of the efferent arterioles. Such sclerotic changes were found regularly in cases of advanced glaucoma and also in one early case of uncomplicated chronic simple glaucoma."

Fifteen Years' Experience with Drainage Tubes After Antrostomy in Children. John J. Shea, M.D., Memphis, Tenn. *Archives of Otolaryngology*, July, 1936.

In 1925 Shea reported five years' experience of using a rubber drainage tube in children after antrostomy. The conclusions of that paper that have stood the test of time are: (1) The end-results of antral drainage in children compare favorably with those obtained in adults. (2) Radical surgical operation on the antrum is rarely necessary in children. (3) Suppurative or allergic processes will arrest the development of the sinuses, but by re-establishment of their normal ventilation and drainage they are pneumatized and usually regain their lost growth. (4) The use of ordinary catheters, No. 12, 14 or 16 French, the size depending on the age of the patient, have been found satisfactory. A well placed tube remains in place, permits free drainage and is easily and painlessly removed; the self-retaining type of tube sacrifices caliber and is difficult to remove, extraction often being very painful.

In the discussion of the selection of cases to be operated Shea makes the interesting observation that a sinus which has been arrested in development lacks the ability to combat infection. Before resorting to operative procedures to remove the focus of infection he uses local treatment with rest in bed and, when possible, hospitalization. His routine is to give the child a mixture of aminopyrine and phenobarbital and ephedrine three or four times daily; pack the nasal passages with cotton soaked in a hypotonic salt solution; expose the area to infra-red rays for twenty minutes and then instill phenolated oil into the nasal passages; the use of a non-specific substance containing albumin, lipid and fat or a streptococcus antigen; an occasional blood transfusion; suction, with or without displacement is tried; and in selected cases direct suction with a rubber catheter.

Ether is preferred for the operative procedure as this gives the operator adequate time to deliberately be thorough. After proper preparation the ostium of the antrum is found and dilated. He is of the opinion that the success of the operation is dependent on keeping the ostium patent. A culture is made of the antral material obtained by means of a syringe and needle. An antral trocar in younger children and a curved gouge in older children is used to make the naso-antral window. Ritter sounds are next used to adapt the opening for the proper size catheter and the catheter is inserted, using a sound for an obturator. Suction is applied and proper precautions are taken to be sure that the second opening is not plugged up or inadequately made.

In a child with a sinus infection it is unusual to find that the tonsils and adenoids have not already been removed. If a drainage tube is put in the antrum and there is any infected lymphoid tissue present it is removed at the same time.

Post-operative care consists of keeping the tubes open and instilling phenolated oil about the tubes. Acetylsalicylic acid is given at regular intervals to prevent headaches. Chemical antiseptics are no longer used to irrigate the antrum. On the fourth morning the tubes are removed painlessly. Irrigations are continued until the discharge stops. If there is a return of symptoms, then irrigations are again employed. An autogenous vaccine is given consistently over a long period of time.

The Pharyngeal Lymphatics as a Focus of Infection. L. E. Brown, M.D., Akron, Ohio. *Annals of Otology, Rhinology and Laryngology*, June, 1936.

Brown calls our attention to three primary statements, viz.: First: That any involvement of the lymphoid follicles or glands under discussion very rarely, if ever, is a primary focus of infection. Second: That as a secondary focus it is a definite factor and source for the distribution of infections, and has long been overlooked or unrecognized as such. Third: The elimination of this focus would aid in preventing infections which originate in the adenoids, tonsils, teeth, sinuses, etc., from being continued indefinitely.

The anatomy of the lymphoid structures and lymphatic drainage of the region with which the subject is concerned is reviewed. He says that the lymphatic drainage begins as a plexus of small closed lymphatic capillaries around and between practically all tissues. The capillaries join to form larger vessels which empty into regional lymph nodes. The region which he discusses has particularly to do with the retropharyngeal, the superior deep cervical and the inferior deep cervical groups. The channels from these groups enter the circulation by means of the right lymphatic duct, and on the left, the thoracic duct. The axillary nodes and the tracheo-bronchial groups may also be involved.

The lymphoid tissues that the above system drains in order of importance are: tonsils, adenoids, the so-called lingual tonsil, the lymphoid tissue at the base of the tongue, the pharyngeal tonsil, the lymphoid tissue at the lower end of the eustachian tube and the follicles on the surface of the pharyngeal mucosa. Special importance is attached to the presence of a string of infected follicles on the lateral pharyngeal walls.

Bearing in mind that an infection is either spread by the blood stream or as an embolic process or by the lymphatics, lymph nodes and infected lymph, the author does not think that these infected pharyngeal follicles should be overlooked when looking for an obscure focus of infection. He states that in thirty-seven per cent of the cases

of focal infection, that the site of the infection is unknown. The painful throat, neuralgic or rheumatic type, and some of the low grade continuous fevers might be accounted for by this site of focus of infection.

There is a paucity of literature on this subject although Coates, Hutchings, Beatty, Cecil, Dunlap, Uffenorde and others have discussed it in a limited way.

The treatment of this condition has been rather unsatisfactory with various strengths of silver nitrate, chromic acid, trichloroacetic acid, etc. Diathermy, radium and x-ray have been used with fair results. The author likes to do a careful dissection of the infected tissue at the same time that any other surgery of the throat is done. With great care and patience, electro-coagulation may be used quite successfully. The advantages of this procedure being that it may be done from time to time as necessary under local anaesthesia and requires no hospitalization. The discussion of diet, hygiene and general measures is omitted.

A Case of Thrush-Primary in and Confined to the Hypopharynx. E. Escat. Abstracted by E. J. Gilroy Glass and Published in *The Journal of Laryngology and Otology*, May, 1934. The original article from *L'O.R.L. Internationale*, 1933, xvii, 161.

The patient, a peasant aged fifty-eight years, had for eighteen months suffered from discomfort in the throat, slight difficulty in swallowing, and nausea. During this period he was frequently dyspeptic and his tongue was coated. For a fortnight prior to being seen by the author his symptoms had been greatly aggravated; swallowing was almost impossible and although there was no stridor, there was a marked sensation of choking.

Indirect laryngoscopy was almost impossible owing to an intense pharyngismus. Direct hypopharyngoscopy showed a greyish white ulcerated area on the back wall of the hypopharynx which bled easily and was foetid. In conjunction with the history, the other signs and age of the patient, a diagnosis of neoplasm was made, and the patient was subjected to radium treatment by means of a collar. When seen two months later, cure appeared to be complete.

The patient was kept under observation from time to time, and for two years was free from symptoms. At the end of this period, dysphagia returned and direct pharyngoscopy showed a whitish plaque behind the right arytenoid and extending deep into the hypopharynx in the mid line. The diagnosis was revised and the case was now thought to be Vincent's angina. This, however, was not confirmed bacteriologically.

During the following year, the case alternately improved and retrogressed, but eventually extended until the false membrane covered not only the whole hypopharynx but also the laryngo-pharynx, sinus pyriformis, and the epiglottis, and the patient was extremely ill, with anorexia, and vomiting. A large piece of the false membrane was removed and again examined bacteriologically by Professor Ristal who reported "an extraordinary quantity of the mycelia of thrush."

In view of all this, all antiseptic treatment was stopped and treatment locally and internally with alkali was commenced. In less than forty-eight hours the patient was obviously better, and in eight days appeared to be completely cured. He was seen again one month later, when not only was the local condition completely cured, but his general health was perfect and he had put on weight.

SURGERY AND GYNECOLOGY

Abstracts, Reviews and Comments from
LeRoy Long Clinic
714 Medical Arts Building, Oklahoma City

Acute Streptococcic Septicemia Originating About Teeth and Gums. (Septicemias Streptocociques d'Origine Gingivo-Dentaire). By Jean Fleury and M. Miniere, Rouen. *La Presse Medicale*, June 24, 1936.

Emphasis is laid upon both acute septicemia and chronic toxemia originating from foci about teeth and gums. The authors speak particularly of the possibility of foci in the mouth being sources from which acute septicemia sometimes develops.

As an example, the case of a patient reported by Lardennois and Krivineis is quoted. Six weeks after a normal confinement, a woman twenty-five years of age had chills, followed by high fever and pains in various joints. After three days she was much better. Following an interval of a few days there was another attack characterized by chills, fever, pains in the joints, this attack lasting about a week when she improved. A short time thereafter there was another similar attack, more prolonged, and in the course of it there was evidence of osteomyelitis of the distal end of one radius. A drainage operation was done, and there was some improvement, but not long thereafter there was an abscess on the back of one of the hands.

At this time a survey of the mouth revealed a suppurative process about a wisdom tooth. The tooth was extracted, and the patient rapidly improved.

LeRoy Long.

Allergy as an Explanation of Dehiscence of a Wound and Incisional Hernia. By J. William Hinton, M.D., Assistant Attending Surgeon, New York Post-Graduate Hospital; Associate Visiting Surgeon, Bellevue Hospital, New York. *Archives of Surgery*, August, 1936.

After referring to reports from many surgeons with reference to the circumstances in connection with the dehiscence, or separation of wounds, following celiotomy, the author says: "The foregoing reports convince one that the type of incision, the magnitude of the operation, the choice of the anesthetic or the type of closure plays only an insignificant part in dehiscence of the wound."

Attention is directed to the absence of infection in most of the cases of dehiscence of abdominal operative wounds. There is a reference to 725 cases reported by Sokoloff, in which only 15.7 per cent showed evidences of wound infection. This has been the experience of the reporter.

The reporter does not take the position that all cases of dehiscence are without infection. On the other hand, he distinctly indicates that dehiscence may be the result of infection. He puts this down as the first type. The second type is dehiscence without infection, "and with this type there are no other complications to account for the dehiscence."

Dehiscence is divided into three stages. In the first stage there is complete separation of the peritoneum and posterior sheath of the rectus abdominis muscle, with incomplete separation of the anterior sheath of the rectus. It has been observed that in such cases there is a slight sero-sanguineous discharge on from the fifth to the eighth day. The outer wound heals by primary union; the inner part is separated.

In stage two there is complete separation of the entire abdominal wound without protrusion of a viscus.

In stage three there is complete separation of the abdominal wound with protrusion of an abdominal discus.

Regardless of the stage, dehiscence of an abdominal operative wound is accompanied by a more or less free discharge of sero-sanguineous material.

Apparently taking into consideration the almost uniform practice of closing the abdomen in layers by the use of catgut sutures, and the oft-repeated observation that catgut is very rapidly absorbed in the case of certain individuals, the conclusion was reached by the author that the average case of dehiscence of an abdominal operative wound is due to an allergic situation in which the catgut is rapidly and prematurely digested. The author says: "There is a warning note by all authors as to the peculiar capacity of the tissues of some persons to digest catgut completely." He refers to Erdmann's employment of the term "tissue hunger."

Nineteen illustrative cases are reported, and in all of them the abdominal operative wound had been closed in layers by catgut, several silk worm gut sutures being employed at the same time.

The author now uses through-and-through sutures of heavy silk or dermal suture material, which are removed on from the eighth to the tenth day. He does not claim any originality. He refers to the use of it by Dr. Joseph Price over fifty years ago, it being continued by Dr. J. W. Kennedy, "and in their combined experience they have not had a single case of dehiscence of the wound or death from infection of a wound."

Summing up, the author says: "In view of the high percentage of cases of dehiscence of the wound, it seems that there must be some other factor or factors than the explanations usually given for dehiscence, such as the type of closure, the make of catgut, infections of the wound, type of incision, respiratory infection, general debility of the patient or the choice of anesthesia. For that reason it seems logical to assume that a certain percentage of patients might be considered allergic to catgut. It is only necessary to recall that one is relying on the protein of a sheep for keeping the tissues approximated."

COMMENT: As indicated by the author, one of the remarkable observations in connection with the dehiscence, or separation of an abdominal operative wound is not accompanied, in the average case, by any evidence of infection. There is a discharge of blood-tinged serum, more or less profuse. This is followed by separation of the wound.

One of the unfortunate features of the situation is that the surface of the abdomen may not give any clue to the actual situation at all, with the exception of the discharge of blood-tinged serum. At the same time, there may be separation on the inside, and a loop of intestine may become fixed in the abdominal wall. If there is at this time any unusual distress, the logical procedure is to deliberately open the wound and re-suture it. For many years our plan has been, when such an occasional case presented, to re-suture the abdominal wound by through-and-through silk worm gut or heavy silk sutures. One of the practical and striking observations has been that after such re-suturing there would be satisfactory healing, without weakness or any evidence of incisional hernia.

LeRoy Long.

Serious Complications Following Neglected Cholelithiasis. Fred W. Bailey, M.D., St. Louis, M. *Annals of Surgery*, May, 1936. Page 781.

The author endeavors to emphasize two pertinent points. First, that symptomless gall bladder

pathology is a rarity. Second, that the infected gall bladder with gall stones is never cured by duodenal drainage nor by medical therapy. Within the past thirty-five years we have become aware that an infected gall bladder is a menace to health; that it does not spontaneously heal without residual pathology; promotes and fosters formation of stone, pericystic adhesions and liver dysfunction; and may be removed without detriment to health.

Early operation before hepatic function is disturbed obviously banishes most of the morbidity which surely follows neglect, such as cholangitis, chronic hepatitis, biliary obstruction, perforation, abscess, peritonitis, crippling adhesions, pancreatic disease and possibly cancer.

At no age in life are gall stones harmless, and a neglected case is always a menace to the well being of the carrier. Two hundred cases were reviewed, the ages ranging from twenty-eight to eighty-six, with symptoms of gall bladder disease present and active from five to sixty years. Periods of morbidity were variable and the complications were uniformly serious.

Each of these patients was of necessity subjected to a serious operation, long tedious hospitalization and subsequent morbidity out of all reasonable proportion to that which would have attended an earlier diagnosis and lowered surgical risk during the period of safety.

All of the two hundred cases reviewed gave positive evidence of varying periods of disabling symptoms; all of them ascribed their early disability to various forms of "dyspepsia," "indigestion," "nervous indigestion" and dietary indiscretions; most of them had been under a physician's care for a prolonged period; the majority had suffered actual biliary colic many times with transient jaundice, intestinal dysfunction and impaired health; among those who were diagnosed, frequent duodenal drainage and bile salts were the prescribed treatment. "Several resorted to the assuring care of the stone-dissolving charlatan, the osteopath, chiropractor or to Christian Science." "Our broader knowledge of the physiologic function of the liver and of its susceptibility to disease, our ability to detect pathology early and a constantly improving technic, should arm us with a more effective remedy, and yet our end result in treating hepatic disorder is not comparable to that of any other disease of which infection is the basic cause."

The seemingly innocent presence of gall stones may later account for (a) indigestion, mild or severe, but persistent; (b) obstruction of cystic or common duct, with disastrous sequelae, such as hydrops, empyema, gangrene, perforation and abscess; (c) recurrent infections transmitted to the liver, increasing dysfunction; (d) pain from insignificant soreness to intense colic; (e) jaundice, mild or severe, persistent or recurrent; (f) cholangitis, pancreatitis, hemorrhagic or cystic, and cancer (from fifty per cent to seventy-five per cent of all cancers of the gall tract and pancreas show the presence of gall stones).

Gall bladder disease with gall stones is not a medical problem. Cholelithiasis is never actually relieved by the spontaneous passing of all resident stones through the natural channels. A definitely diseased gall bladder with gall stones is never cured "spontaneously" or by duodenal drainage or other medical therapeutic agents. Since this is a definitely surgical disease it should never be allowed to pass from the stage of a safe operative risk, on to the certain development of disastrous sequelae, without fully informing the patient of its potentialities. The infected gall bladder with stones is a definite surgical problem entitled to prompt surgical attention when diagnosis is certain and

before irremedial liver, gall tract and pancreatic damage has been inflicted.

The authors conclusions are as follows:

1. From a review of two hundred gall bladder operations, more than fifty, or twenty-five per cent, were seriously complicated, requiring life endangering operations.

2. Infected gall bladder with stone is usually a progressive pathology, gradually merging from a simple to a serious surgical problem.

3. Persistent symptoms of indigestion, dyspepsia, flatulence or upper abdominal pain justify careful examination and observation. A diseased gall bladder seldom, if ever, entirely heals, and usually becomes a factory for stones and related complications.

4. Early or preventive surgery in a frankly surgical disease is a most potent factor for safety, and is quite as essential in gall bladder disease as in toxic goiter, appendicitis, or chronic intestinal obstruction.

LeRoy D. Long.

The Response of the Mammary Gland to Prolonged Stimulation with Ovarian Hormones. By Ian G. McDonald, M.D., Cornwall, N. Y. *Surgery, Gynecology and Obstetrics*, August, 1936, Page 138.

This is a study of the mammary gland changes produced in castrated rabbits by long periods of artificial stimulation with corpus luteum and estrin hormones. The author's conclusion follows:

- "1. The continuous administration of the (ovarian) hormone estrin in castrated rabbits produced, at first, a generalized overgrowth and ramification of the ductal system in the mammary gland with practically no acinar growth.

- "2. Carried further (one hundred days), little gross change occurs, but atypical histological variations appear in the ductal epithelium which often verge on the border line of neoplastic changes.

- "3. When such stimulation is prolonged for six months or more, both the gross ductal growth and microscopic epithelial hyperplasia regress to a nearly resting state. Ductal widening is not prominent under pure estrin stimulation.

- "4. In rabbits the response of the ductal system of the breast and its epithelium to continuous estrin stimulation is confined to certain limits, past which a refractory state is set up.

- "5. Estrin and corpus luteum extract in combination produce both ductal and acinar overgrowth; early secretion occurs and the ducts become distended.

- "6. Dilatation of the ducts is probably mechanical from distention by secretion, and not a specific effect of estrin.

- "7. Estrin and progesterin, on the basis of present evidence, do not produce specific pathological lesions, cystic disease and adenosis."

Wendell Long.

The Blood Loss During Normal Menstruation. By Adelaide P. Barker, Ph.D., and W. M. Fowler, M.D., Iowa City, Iowa. *American Journal of Obstetrics and Gynecology*, June, 1936, Page 979.

These authors found that a review of the literature revealed no uniformity of opinion as to what constitutes the blood loss during normal menstruation. They felt that in order to evaluate properly the significance of excessive menstrual bleeding as an etiological factor in certain types of anemia, it was essential to have definite information as to the amount of blood that is lost with each normal period.

This study was made of one hundred normal women ranging from fifteen to forty-three years of age, all in good health with what was considered normal menstruation.

The collected material was analyzed for iron. The menstrual blood iron was converted into grams of hemoglobin and this in turn into the equivalent amount of the individual's blood.

"The menstrual blood loss in 100 apparently normal women ranged from 6.55 cc. to 178.69 cc. with an average of 50.55 cc. Fifty per cent of these women lost between 23.21 cc. and 68.43 cc."

The duration of the period and the number of napkins used give only a vague idea of the amount of menstrual flow, according to this study. The statement of a patient that her menses are normal in amount means but little since this individual has no other standard except her own experience to determine the question of a normal menstruation.

From their study these authors conclude that continuous excessive iron loss, such as they experienced in these supposedly normal individuals, may account for certain cases of hypochromic anemia which have been considered as idiopathic in origin. They admit that this may not be the only etiological factor in all such cases but that it undoubtedly plays an important and frequently unrecognized role.

COMMENT: This is an interesting piece of work, well done, establishing certain averages for the amount of blood loss in the supposedly normal menstruation. It in turn reflects some doubt upon our usual means of clinically determining amount of blood loss by question as to the duration of the period, the number of napkins used, and the question as to whether the period was "normal" or not.

Wendell Long.

PLASTIC SURGERY

Edited by GEORGE H. KIMBALL, M.D., F.A.C.S.
204 North Robinson Avenue, Oklahoma City

Rhinophyma. Dr. Grant P. Pennoyer. *Annals of Surgery*, May, 1935.

The following is an exact copy of an article as it appeared in *Annals of Surgery*, May, 1935, Vol. 101:

I do not think that many general surgeons appreciate how easy it is to give a patient with rhinophyma a good cosmetic result. The disease is extremely disfiguring and it is surprising how the general morale of a patient is improved by restoring the natural appearance of his nose. It is true that the disease usually occurs in people of the lower strata of society where vanity is not greatly emphasized, but even in this group, these patients often take a new lease on life with the removal of their disfigurement.

The patient presented had a nose so large that he could not see his feet only with the greatest of difficulty and he had become a recluse, because as soon as he appeared on the streets he was ridiculed.

My interest in the disease was stimulated many years ago by seeing Dr. James White, Professor of Dermatology, operating on a huge rhinophyma in a back room, while loudly denouncing surgeons for not operating upon these cases in the manner in which he asked them to operate. Dr. White was not a surgeon. He simply whittled off the excess tissue exactly as one would whittle a stick. There

was considerable hemorrhage which was entirely controlled by pressure with gauze sponges.

Dr. White showed me a large number of pictures of excellent end results in these cases, some going back for more than thirty years, and said that his predecessors had taught him to do the operation before that. Despite this convincing evidence, he was unable to persuade surgeons to take over the cases.

The operation consists simply of paring off the lobulations of diseased tissue so that the nose at the completion of the operation is of normal size, though apparently denuded of skin. Care must be taken not to enter the nostril or injure the nasal cartilages. An instrument can be placed in the nostril to appreciate the thickness of the tissue left, if one suspects that he is removing too much. Some arteries may have to be tied, but most of the hemorrhage can be controlled by pressure. I have been dressing them with rubber tissue, and it is amazing how rapidly the denuded area is epithelialized. The reason for this is obvious if one studies the microscopic sections. The excess tissue lies in lobules at the base of which remain islands of epithelial tissue which are left on the nose and from which the new epithelium rapidly grows. Healing is usually complete in less than three weeks. Areas of epithelial tissue are also scattered in the lobules themselves, so that it is almost impossible not to leave some epithelium on the nose, although it is not grossly apparent.

These patients all have thick acneform skin which, of course, is not cured by the operation, but the nose itself remains fairly normal and in our experience the condition does not tend to recur. Roentgen ray treatment, as far as the nose is concerned, has not been necessary.

Patients with this condition are almost all poor and totally unaware of the ease with which it may be corrected. They usually come to the hospital with some other complaint. The operation, therefore, has to be sold to them. I have never yet had a patient come to me first for the nose.

It is hoped that in presenting this patient the interest of the general surgeon may be stimulated regarding this condition so that he will voluntarily offer to relieve the unfortunate sufferers of this disfigurement.

COMMENT: One of the best ways to remove a rhinophyma is to use a sharp straight razor or a skin razor and literally pare the lobulation away from the supporting structure from the end of the nose. After the nose is pared to the size desired, apply tannic acid and allow epithelialization to take place. The results are surprisingly good.

Herniorrhaphy Using a Living Fascial Flap. Robert P. Wadhams, M.D., and Victor Carabba, M.D., New York, N. Y. From *Annals of Surgery*, Vol. 101, No. 5.

The authors comment about the unsatisfactory results in inguinal herniorrhaphy. They describe an operation that they have used since 1929 especially in recurrent hernia or of primary hernia in which the usual procedures were not adequate. The authors use a strip of fascialata from the same side as the hernia operated on, leaving the superior end of the fascial strip attached. After a preliminary closing of the fascial structures of the hernia, the fascial flap is sutured in place above and below the cord at its exit from the internal abdominal ring to the inguinal ligament and pubic spine. If it is possible to attach the conjoined tendon at the same time, it is also included in the suture. Sometimes the upper border of the flap is attached to the rectus sheath.

COMMENT: There is no doubt that this operation is indicated in certain cases. I have personally never used it for the reason that I have always employed the fascial strip used on a needle and interwoven into the tissues and anchored with catgut sutures.

Treatment of Recurrent Incisional Hernia by Flaps of the Anterior Sheath of the Rectus. By Norman S. Rothchild, M.D., Philadelphia, Penn. *Annals of Surgery*, Vol. 101, No. 2.

The authors enumerate the factors concerned in the production of incisional hernia as follows: (1) Prolonged drainage of the peritoneal cavity; (2) extensive infection of the wound; (3) incomplete suturing of the peritoneum and the fascia, and the suturing of the fascia under undue tension.

Some cases of large herniae require special operations. Most every one is familiar with the operation outlined by Gallie, and LeMesurier. Also the method by Koontz and MacKenzie and Farr.

Gibson has treated these herniae by means of lateral incision of the anterior sheath of the rectus muscle, making it possible to approximate the margins without undue tension.

The procedure about to be described was done through a misunderstanding of the Gibson technic.

The first step of the operation consists of an adequate exposure of the sac of the hernia and the anterior sheaths of the right and left rectus muscles. The sac should be opened in all cases in which the contents cannot be reduced, which permits the severance of adhesions of the omentum to the sac, and the exploring of the upper abdomen. The sac is then excised and its edges sutured, where the contents of the sac are reducible, the sac may be reduced in size by the inversion method of Haynes, which consists of a series of sutures. The first is similar to the Connell stitch and inverts the central portion of the sac. The second suture included the external limit of the sac and the median margin of the anterior sheath of the rectus.

The second step consists in the clearing of the anterior sheath of the rectus of all adipose tissue. One then measures the longitudinal and transverse diameters of the hernial orifice. Markings are made on the anterior sheaths of the recti muscles to designate the length of the flaps desired. Markings are also made to designate the width of each flap, so that when the flaps are sutured together they will cover the hernial orifice without undue tension. Transverse incisions, above and below, are made in the sheath, and these transverse incisions are connected by longitudinal incisions. These lateral flaps are raised and hinged along their medial border. They are then sutured by a continuous stitch. The upper and lower edges are sutured by interrupted stitches to the remaining portion of the anterior sheath of the rectus. Redundant skin is removed, stab wounds are made at the lowest level and drains inserted at these points. The wound is then closed.

Where the hernia is the result of an upper right rectus incision the flap of the left rectus sheath will necessarily be larger than the flap obtained from the right side, while in hernia occurring in the midline, the flaps will be of the same size. It is exceedingly important to establish adequate drainage because of the extensive dissection of the skin and subcutaneous fat. In one of our cases, a large haematoma developed despite the fact we had provided drainage.

COMMENT: Like other tissue shifting procedures this operation has a definite place for the large redundant abdominal wall with a centrally placed hernia.

While the technic described is very clear cut and practical, yet it is not entirely new in principal. A great many men have used this same idea simply by necessity, that is, finding a large widespread opening and being forced to go to the rectus sheath to close the defect.

The post-operative reaction of some of these cases is not at all good. Abdominal distension often plays havoc with the operation. Compression of the chest by closing the widespread opening of the abdominal wall often leads to pulmonary complications. A great many of these patients are not good surgical risks.

Heating of Human Tissues by Short Wave Diathermy

John S. Coulter and Howard A. Carter, Chicago (*Journal A. M. A.*, June 13, 1936), studied the heating efficacy of short wave diathermy in living human fat and muscle of the thigh, employing, first, an electric field of 6, 12, 18, and 24 meter wavelengths, using the cuff electrode technic; secondly, an electromagnetic field of 12, 18 and 24 meter wavelengths, using the coil technic. There were no significant differences in the use of 6, 12, 18 and 24 meter wavelengths when using the cuff technic of the electric field method and no significant differences in the use of 12, 18 and 24 meter wavelengths when using the coil technic of the electromagnetic field method. A practical and social problem becoming more and more important is the interference of short wave diathermy energy with radio communications. Two remedies have been proposed: one is the allocation of a special wavelength band for therapeutic purposes and the other is the proper screening of short wave diathermy machines and equipment. If, in subsequent investigations, a single frequency was found to be satisfactory for all treatments, the oscillators would have to be stabilized so that deviation of no more than a kilocycle from this assigned frequency would ever occur. Short wave diathermy machines would have to be manufactured with a frequency stability corresponding to a good radio transmitter. If the second remedy should be adopted, radio-frequency filters or wave traps would have to be inserted in the power leads to prevent reradiation of the high frequency energy back into the power mains, and the treatment room would have to be screened and grounded. Because of the ever increasing need for radio communication channels, it would seem that the method of screening and line filtering takes precedence over the allocation of a wave band for therapeutic purposes.

The Feeding of Modified Gastric Juice in Pernicious Anemia

Fredric M. Hanes, O. C. Hansen-Pruss and J. W. Edwards, Durham, N. C. (*Journal A. M. A.*, June 13, 1936), repeated Greenspon's experiment (of feeding pernicious anemia patients normal gastric juice so treated as to inhibit the action of pepsin), adhering strictly to his technic, in five typical untreated cases of pernicious anemia. Fifteen normally healthy medical students have acted as donors of gastric juice, which in every instance has been tested for the presence of free hydrochloric acid. Histamine (0.1 mg. per kilogram of body weight) alone was used to stimulate the flow of juice, and if there was evidence of food contamination the specimen was discarded. This method of treatment produced no subjective or objective improvement in the patient's condition. No evidence of increased erythropoiesis was observed, either in the bone marrow or in the circulating blood.

The International College of Surgeons—Why?

Into the welter of scientific, pseudoscientific, medical and similar organizations which now appeal for the physician's patronage comes the International College of Surgeons, promoted by none other than H. Lyons Hunt, who has already to his credit (sic) the Association of Medical Editors and Authors. The prospectus indicates that the purpose of the organization is to bring together in closer harmony the leaders of the various colleges of surgeons now in existence; yet there is not the slightest evidence that the colleges of surgeons in any country have indicated their willingness to be brought together by this new organization. Among the other objectives, the new "College" proposes to elevate the standards of surgery to a point at which international reciprocity may be realized; it is quite safe to say that international reciprocity in surgery must be a figment of the imagination for many generations to come. Apparently there will be a publicity department to keep the public informed as to what surgery can accomplish, prizes offered for research, a museum established in Geneva, a journal published and a building erected in Geneva, where the foreign

promoter, A. Jentzer, resides. There are also to be annual meetings in the individual countries as well as a meeting every two years in Geneva. Finally, there will be three classes of members, notably members, fellows and masters, who will be entitled to place after their names the appropriate alphabetic insignia. The fellows are to be selected by election, appointment or examination. Apparently the first comers are all being appointed, but by whom and under what authority the prospectus sayeth not. Notwithstanding the obviously inflationary character of this prospectus and the complete lack of any authenticated background for this proposed organization, a considerable number of American physicians have felt themselves highly honored by the receipt of the invitation and are already taking steps to extend the appendix to their names by the additional letters which they will purchase through this international college. There exists already an international surgical organization of standing and repute. No doubt an invitation to membership in this organization would be a considerable honor and well worthy of consideration by any competent surgeon. An invitation to membership in the

Report of Licenses Granted to Practice Medicine

NAME	Year of Birth	Place of Birth	School of Graduation	Year of Graduation	ADDRESS
Ghormley, James Grant	1901	Kansas City, Mo.	University of Okla.	1934	Blackwell, Okla.
Standifer, Lilburn Echols	1895	Tulia, Texas	Tulane University	1925	Oklahoma City, Okla.
Gardiner, Howard Glenn	1910	Geary, Oklahoma	Oklahoma University	1935	Chicago, Ill.
Prentiss, Harley Merton	1892	Melamora, Ohio	Oklahoma University	1918	Nowata, Okla.
Bell, Austin Holloway	1904	Hopkinsville, Ky.	Vanderbilt University	1929	Oklahoma City, Okla.
Haslam, Gilbert Earle	1900	Piedmont, Ala.	Emory University	1924	Anadarko, Okla.
Hoos, Bessie E. Mayo (F)	1898	Lockhart, Texas	Baylor University	1923	Oklahoma City, Okla.
Joss, William Irving	1871	Fairview, Kans.	Hahnemann College	1906	Erick, Okla.
Klotz, Wm. Friedrick	1907	Memphis, Tenn.	University of Tenn.	1931	McAlester, Okla.
Mills, Charles Kelley	1901	Boonville, Ind.	Indiana University	1926	McAlester, Okla.
Munal, John Edward	1905	Memphis, Tenn.	University of Tenn.	1928	Holdenville, Okla.
Nealson, Jas. Kenneth	1903	Pittsburgh, Pa.	Ohio State University	1930	Elk City, Okla.
Russell, Allen Rutledge	1900	Hot Springs, Ark.	University of Ark.	1929	McAlester, Okla.
Simon, Bettie Harris (F)	1907	Webster Groves, Mo.	Washington Univ.	1930	Oklahoma City, Okla.
Werling, Edmund Henry	1906	Humboldt, Texas	Washington, Univ.	1930	Pryor, Okla.
Border, Clinton L.	1903	Louisa, Ky.	Univ. of Louisville	1929	Mangum, Okla.
Skemp, Frank Scofield	1884	Minneapolis, Minn.	University of Minn.	1909	Talihina, Okla.
Barnes, Harry E.	1910	Oklahoma City, Okla.	University of Okla.	1935	Oklahoma City, Okla.
Bigler, Earl E.	1906	Bismarck, N. D.	Northwestern Univ.	1934	Claremore, Okla.
Blinde, Oscar J.	1907	Johnson, Neb.	Oklahoma Univ.	1935	Seattle, Washington
Kirby, Lester Richard	1907	Gebo, Montana	University of Colo.	1934	Keene, Okla.
Cooper, John William	1904	Corrollton, Mo.	Washington Univ.	1931	Oklahoma City, Okla.
Yates, June	1908	Grapevine, Texas	Baylor University	1933	Ada, Okla.
Anderson, Paul Sanford	1908	Oklahoma City, Okla.	Oklahoma University	1935	Claremore, Okla.
Buffington, Fred Courtney	1911	Houston, Texas	Oklahoma University	1935	Norman, Okla.
Cunningham, Curtis B.	1905	Custer City, Okla.	Oklahoma University	1935	Oklahoma City, Okla.
Cowling, Robert Emmett	1901	Abbott, Ark.	Oklahoma University	1935	Oklahoma City, Okla.
Johnson, L. G.	1907	Little Rock, Ark.	Oklahoma University	1935	Oklahoma City, Okla.
McPike, Lloyd H.	1903	Condo, N. D.	Oklahoma University	1935	Sand Springs, Okla.
Beaty, C. Sam	1905	Laverne, Okla.	Oklahoma University	1935	Oklahoma City, Okla.
Bozalis, George S.	1910	Nashville, Tenn.	Oklahoma University	1935	St. Louis, Mo.
Harmon, Thos. F.	1912	Sallisaw, Okla.	Oklahoma University	1935	Sallisaw, Okla.
Petty, James Sturges	1909	Guthrie, Okla.	Oklahoma University	1935	Guthrie, Okla.
Plummer, Thos. Orlando	1907	Shelby, Ohio	Oklahoma University	1935	Denver, Colorado
Mayfield, Hugh Jean	1908	Eldorado, Ark.	Tulane University	1935	Eldorado, Arkansas
Cotton, William W.	1907	Sallisaw, Okla.	Oklahoma University	1935	Walters, Okla.
Brown, Harwin Joseph	1909	—, Wisconsin	University of Wis.	1935	Oklahoma City, Okla.
Gutsche, Paul W.	1906	New York, N. Y.	University of Okla.	1935	Oklahoma City, Okla.
Deputy, Ross	1907	Oklahoma City, Okla.	University of Okla.	1935	Clinton, Okla.
Haygood, Chas. Wendell	1909	Hanley, Texas	University of Okla.	1935	Oklahoma City, Okla.
Weeden, Alton James	1907	Sasakwa, Okla.	University of Okla.	1935	Duncan, Okla.
Barker, Clyde J., Jr.	1911	Kaw, Okla.	University of Okla.	1935	Phoenix, Arizona
Murphy, Weldon Odell	1912	Tipton, Okla.	University of Okla.	1935	Oklahoma City, Okla.
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Colcy, Joe Henry	1907	Alexander City, Ala.	Jefferson Med. Col.	1934	Oklahoma City, Okla.
Cushman, Harry R.	1911	Colo. Springs, Colo.	University of Okla.	1935	Clinton, Okla.
Gallaher, Paul C.	1911	Shawnee, Okla.	Northwestern Univ.	1936	Shawnee, Okla.
Taylor, Jim Mabury	1911	Spencer, Okla.	University of Mich.	1935	Oklahoma City, Okla.
Watson, I. Newton	1908	Guymon, Okla.	University of Okla.	1935	Oklahoma City, Okla.
Elkin, Wm. Paul	1906	Edmond, Okla.	University of Okla.	1935	Washington, D. C.
Garnier, Wm. Hampton	1910	Weleetka, Okla.	University of Okla.	1935	Oklahoma City, Okla.
Holtz, Harvey Everett	1907	Akron, Kans.	University of Okla.	1934	Iowa City, Iowa

present promotion might be considered more of an insult to the intelligence of the recipient than a recognition of extraordinary qualifications. One need not cast aspersions on the intelligence of the promoters. As psychologists they seem to have a fine insight into the weakness and folly of the average man, who likes to adorn himself in regalia and to adorn his cognomen with assorted alphabetic conglomerations.—Journal A. M. A., June 20, 1936.

Osteomyelitis of the Inferior Surface of the Petrous Pyramid

Wells P. Eagleton, Newark, N. J. (Journal A. M. A., Aug. 15, 1936), points out that our knowledge of infections of the petrous apex is still very primitive. Like mastoiditis and Bright's disease, apicitis is a generic term, covering a large number of different pathologic states, the symptoms of which are modified by the surrounding parts. The differentiation of the exact pathologic lesion present is of the highest surgical importance, as any ill directed surgery on the delicate endothelial blood vessels making up the sinusoidal spaces of the apex, which are the site of suppuration, only too frequently precipitates the very lesion that one is attempting to prevent, converting a local sinusoidal osteomyelitis into an invasive infection of the blood vessels, which rapidly spreads into the vessels of the meninges and cerebral tissues, causing either a fulminating meningitis or an infective meningo-encephalitis. Thus each variety of petro-apicitis requires clinical differentiation because the specific line of treatment to be adopted depends not only on the nature of this lesion but on its anatomic position in the bone, if one is to prevent the development of a complicating, generalized septic meningitis, which is the cause of practically all fatalities from apical infections. The author discusses the petrous apex from a pathological and surgical point of view, pointing out that it is divisible into three domains and then discussing the various surgical lesions. He stresses that in every case of apical suppuration the lateral pharyngeal wall should be inspected frequently, as a perforating abscess from caries of the base gives few or no symptoms. Osteomyelitis from aural suppuration limited to the petrous base below the carotid and the region of the petro-occipital articulation is a distinct entity. It can be diagnosed before the advent of men-

ingitis, which is inevitable unless the suppuration "eats" through the thick bone of the base and discharges into the lateropharyngeal roof, or unless the bone is surgically perforated. Out of about fifty verified cases of suppuration within the petrous apex, the author had six cases of osteomyelitis below the carotid, so the condition is far from infrequent. Of the six, only three caused a demonstrable fluctuating swelling in the pharynx. The other three cases presented large collections of pus below the carotid artery inaccessible to any operative approach from the aural region but probably curable by bolding perforating the bone of the petrous apex in the lateral pharyngeal roof mesial and slightly posterior to the eustachian tube.

Athletic Injuries

Marcus H. Hobart, Evanston, Ill. (Journal A. M. A., Aug. 15, 1936), demonstrates that owing to the present widespread interest in athletics, the study and care of athletic injuries is forcing itself more and more on the attention of the medical profession. The physician should be in full control of the physical side of the team, as the head coach is in charge of the athletic side. They should work together. Under the doctor and the coach there should be trainers, masseurs and physical therapists whose duty it is to keep the men in condition, but any special treatment should be prescribed by the doctor and supervised by him. Complete harmony should exist between all those in charge. All athletes should have a physical examination at least each season. The heart, pulse and lungs should be checked over, examination made for hernias, and any other abnormalities noted. There should have been a recent successful vaccination against smallpox. All injuries should be reported immediately to the team physician. Athletic injuries demand special consideration by the medical profession as they are in a class by themselves. It is necessary for an athlete to obtain quick but none the less complete cure. Certain advances have been made in the treatment of specific athletic injuries. This review includes twelve years' surgical experience in handling athletic injuries at Northwestern University. Detailed statistics cover a five year period (1930-1934) during this time. In treating or coaching athletes it should always be borne in mind that all serious or permanent disabilities should be prevented and that the individual should come first and athletics is purely secondary.

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The Choice of Surgical Procedure in Peptic Ulcer*

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The surgical treatment of peptic ulcer is a fresh and engrossing subject. The masters of surgery have furnished us with highly developed and standardized techniques, but the responsibility for selecting from among them the procedure best suited to his patient is still the task of the individual operator. He has a wide selection of procedures and the criteria that must guide his choice, concern the fundamentals of the anatomy, physiology and chemistry of the digestive tract.

In peptic ulcer we are dealing with a systemic disease, and hence the main object of the surgical attack is not to destroy the local lesion, but to alter the conditions which in the first place allowed the ulcer to arise and have since allowed it to persist. We do not know the ultimate cause of ulcer disease, but we do have sufficient evidence to show that if we can intervene successfully to do away with local irritation, we can, generally speaking, reduce the disease to latency and keep it there. The irritation which clinical and experimental studies have shown to be concerned locally in the development and persistence of peptic ulcer are, mechanical and chemical, the friction of food particles and the erosive action of the acid secretion of the gastric glands.

Conservative operative therapy has, therefore, turned to the problem of diverting all or part of the chyme from the ulcer site and of lessening the acidity of the gastric contents.

Peptic ulcer is found most commonly in the duodenum, especially in the bulb and most often on the lesser curvature of the bulb. In the stomach the most frequent sites are the lesser curvature and the pylorus. An anastomosis between the stomach and the jejunum thus acts to divert at least a portion of the chyme from the site of the ulcer in the great majority of cases. The anastomosis serves three other purposes important to the cure of the ulcer: it shortens emptying time, it drains the residual free acid promptly from the stomach, and it reduces gastric acidity by allowing freer access of the neutralizing intestinal juices into the stomach through the sphincterless anastomotic stoma.

The operation of gastro-enterostomy, the classic operation over a period of many years for ulcer of the stomach or duodenum, thus fulfills very well the demands of conservative surgery in a large number of cases. The condition that it creates is, however, not physiologic and it cannot be denied that in a considerable number of cases this fact gives rise to difficulties that destroy the value of the operation for the patient concerned. In so far as the pyloric outlet remains patent, the chyme will tend to return more and more to its natural route by way of the duodenum, restoring the old conditions of mechanical and chemical irritation. If there was a functional pyloric obstruction with dilated stomach at the time of operation, the successful effect of the gastro-enterostomy in protecting the ulcer from irritation is likely in the end to work its own defeat. For

*Read before the Oklahoma City Clinical Society November, 1934.

as the irritation decreases and the pyloric spasm relaxes, not only does the pyloric opening become patent again, but, the stomach walls regaining their normal tone, the gastro-enterostomy stoma becomes smaller and smaller and may close altogether, exactly as a hole snipped in a rubber band will be large while the band is stretched but close up when the band is allowed to go back to its normal size. More serious still, the acid chyme, falling directly on the jejunal mucosa, which is not by nature adapted to contact with acid, gives rise to jejunal ulcer in a certain percentage of cases.

Because of these disadvantages, inherent in gastro-enterostomy as a cure for ulcer, a number of other procedures have been devised: pyloroplasties and pyloric resections, joining the stomach to the duodenum without the interposition of the pyloric sphincter and conserving the physiologic route of the chyme, or excluding the pylorus and the whole or part of the duodenum altogether from the food route and leaving these parts closed blindly at the proximal end; and, lastly, partial gastrectomy.

The last named is a distinctly radical procedure. Much has been written as to whether or not, and to what extent, it can be depended upon to produce anacidity or even a high degree of hyperacidity. The entire question of the secretion of acid in the stomach is complex. But Richter¹ has pointed out insistently that the proper purpose of gastric resection for ulcer is not reduction of acidity, but the removal of all that tract of stomach and duodenum which experience has shown to be by nature the region where ulcer develops. The antrum, pylorus and upper portion of duodenum have characteristics which permit them to be spoken of as one organ. Bevan,² for instance, points out that the mucosa of the lesser curvature of the stomach and of the duodenal bulb differs from that of the rest of the stomach, that its blood vessels are more like end arteries; he traces the ulcer pathogenesis to hemorrhagic infarct, destroying the circulation in the particular area. It is the aim of the radical operation, Richter maintains, to ablate this organ for disease, somewhat on the principle that the gall bladder is ablated for disease.

This radical procedure has become the surgical method of choice in treating practically all gastric and duodenal ulcers in the most important of the continental European clinics—notably those of Germany and Austria. The noted master of surgery—von Haberer—is its strong advocate. In this country a very few of the large Eastern clinics are following the German lead in this respect. But for the most part, it is emphatically true that American and English surgeons are holding strongly to conservative surgery of duodenal ulcer except for special indications and that they have by no means deserted conservative surgery for ulcer of the stomach.

It would appear from a comparison of the German and American literature on ulcer that the type of ulcer disease met with in Germany and Austria differs from that commonly encountered in this country and that this difference—a stronger tendency to multiple ulcers and to an accompanying gastritis, which is felt to have an important etiological significance—probably explains and justifies the difference in preferred surgical procedure. It has also been pointed out that those American clinics where the radical operation stands in high favor have reported multiple ulcers and gastritis as frequent findings, and that they are largely attended by patients of foreign birth.

In conservative surgery, the excision or destruction by cautery of the ulcer itself has generally been handled as a matter of secondary importance. It is not always possible to get at the ulcer or to destroy it without undue risk, and experience has shown that it is not always necessary, that with elimination of the factors of irritation the ulcer often heals spontaneously. Blagdon and Simard³ have recently described the postmortem findings on two patients who died of intercurrent disease two and one-half months and fifty-seven days, respectively, after being operated on. In one patient posterior gastro-enterostomy had been performed for a large callos ulcer of the lesser curvature of the stomach, near the pylorus; in the other, a simple burying of a perforated ulcer of the duodenum, with a growth as large as a goose egg and firmly attached to the pancreas. They found complete anatomic heal-

ing of the ulcer with regeneration of the mucosa in each case. Nevertheless, when the ulcer is accessible it is proper to remove it or destroy it if possible. A bleeding ulcer may be sutured and enfolded and further protected by tabs of omentum. Moynihan⁴ is insistent that the ulcer should never be left to take care of itself.

With the multiplicity of reliably vouched for procedures now available, we have reached the point where surgical judgment is mainly concerned with the selection of the particular operation for the particular case. *There is, and can be, no method of choice for peptic ulcer.* The responsibility of the surgeon is thereby increased. He must have in the forefront of his mind not only the technics for the different procedures but also the criteria by which to select the one that is the most appropriate. The final choice cannot be made from preliminary studies. It must be made at the operating table after the ulcer is located. Each case must be individualized.

Individualization must be made from a consideration of (1) the site of the ulcer, (2) character and extent of the ulcer, (3) complications present, (4) condition of the patient and (5) the experience of the surgeon. As complications exerting a determining influence in the choice of surgical procedure, may be named: (1) pyloric obstruction, (2) deformity of the duodenum, (3) adhesions and relations to other organs, such as the pancreas, (4) hemorrhage, (5) perforation, and (6) in case of gastric ulcer, danger of carcinoma.

The extensive, circatrized ulcer of the duodenum, deforming the latter and producing an organic obstruction at the pylorus, is best handled by gastro-enterostomy. Organic obstruction to passage by the normal route is the most definite of all indications for this operation. In general, it must be said that gastro-enterostomy has given a high percentage of satisfactory results, and it can be expected that it will give still greater satisfaction in the future if cases for which a little more careful thought would show its unsuitability and those for which obviously more suitable procedures have been devised are eliminated. Moynihan,⁴ who is an upholder of the usefulness of gastro-enterostomy, insists that the ulcer must be demonstrat-

ed before the operation is justified and that it should never be performed without the addition of some method of caring for the ulcer itself; his large experience has convinced him that it is unsafe to depend on spontaneous healing of the ulcer as a sequel of the operation. Also, he protests against "the immediate slapdash attack." Patients with chronic duodenal ulcer are good surgical risks unless there has been a recent hemorrhage, but to keep down the mortality to what he feels it should be, less than one per cent, the patient must be prepared. McCann⁵ lays stress on the protection from complications which gastro-enterostomy affords when the ulcer is not destroyed. Perforation, which he thinks occurs in about five per cent of chronic ulcers, is very rare after gastro-enterostomy, and hemorrhage is reduced from an incidence of fifteen to twenty-five per cent with a mortality of three to five per cent, to an incidence of about nine per cent, with a negligible mortality. McCann has found simple gastro-enterostomy satisfactory in caring for ulcer situated high in the cardia near the esophagus, which cannot be resected or destroyed by cautery.

Operations that retain the physiologic route through the duodenum but do away with the pyloric sphincter seem, theoretically, to be nearest the ideal. The pyloric sphincter is above all else the factor which maintains conditions favorable to persistence of the ulcer. Pyloroplasty permits a direct attack on the ulcer, it overcomes pylorospasm, promotes neutralization of the acid gastric juice by freer entrance of alkaline secretions from the intestine into the stomach, and it spares the jejunal mucosa contact with strong acid. Unfortunately, there are a large number of cases in which the situation of the ulcer and the complicating adhesions and deformities make it difficult or impossible to apply such procedures. A small ulcer located high on the anterior wall of the duodenum and leaving the duodenum mobile is easily handled by a pyloroplasty. A "kissing" ulcer of the posterior wall may be cared for by cauterization after the anterior wall ulcer has been excised. Many forms of plastic operation on the pylorus have been devised, Horsley, Balfour and Judd have been especially active and successful in developing the method. Judd⁶ is of the

opinion that it can be applied to fifty per cent of duodenal ulcers. A gastric ulcer situated close to the pylorus on the anterior wall is also amenable to this method.

An ulcer lower down on the posterior wall of the duodenum offers difficulties to excision. Relations with the common duct and with the pancreatic duct bring danger of pancreatic or biliary fistula, and, further, the ulcer may have invaded deeply the pancreas. It is particularly for this type of ulcer that exclusion operations have been devised. The exclusion operation leaves the ulcer *in situ* but isolates it definitely from the action of the chyme. The two main methods are Finsterer's method, in which a wide slice of the distal portion of the stomach is removed, leaving a segment of the pylorus to be excluded with the ulcer-bearing portion of the duodenum, and the proximal portion of the stomach is joined to the duodenum or the jejunum, and Devine's method, in which no resection is done, but the stomach is simply divided, the distal part closed and the proximal part sutured to the jejunum. The difference is that with Finsterer's method the antrum is removed and with Devine's method it is excluded along with the duodenum. Steinberg⁷ has published experimental work which suggests that the antrum when left excluded contributes to the production of jejunal ulcers by stimulating its secretions, the acid secretion of the fundus. But evidence on this point is conflicting. Other studies on experimental animals have shown the excluded antrum functionless, and Devine himself and McCann have had occasion to re-operate on patients a year after the exclusion operation and found the excluded antrum contracted and empty. Good results from Devine's operation have been reported in fair sized series of cases and the operation has been recommended especially where the ulcer is bleeding or where perforation threatens.

Perforation is a condition in which operation must be, in the first place, life-saving. The condition of the patient generally precludes more extensive surgery at the time than simple closure of the ulcer. A massive, recurring hemorrhage threatening life places the surgeon in much the same position. He can do only what the patient's state allows. Lahey⁸ feels that a

direct attack on the ulcer itself with transfixation and cross suture is at any rate justified in this situation.

The case for ulcer of the stomach differs in a number of respects from that for ulcer of the duodenum. There is still a considerable difference of opinion as to how great is the risk of cancer developing in a gastric ulcer. While the vast majority of English and American surgeons reject partial gastrectomy for duodenal ulcer, it is admitted that for ulcer of the stomach the radical operation may be justified in many cases. Here, particularly, however, it is necessary to take in account the experience of the individual surgeon. Gastrectomy requires a high degree of skill if the mortality is to be kept within reason. It has been shown in clinics where this method is used almost exclusively that the mortality can be kept down to about five per cent, but to attain anything like this low rate the operator must be in the habit of performing the operation regularly, not just for the occasional case.

We have today a gratifying richness in method and technics for the combat of peptic ulcer. Our task is to learn to differentiate and apply so as to obtain the best results for each individual combination of circumstances. In the process, some method will perhaps be sifted out and relegated to the background, while others will be found to have a wider usefulness. As we grow in experience I think it might be well to feel our way in some of the more radical procedures. At present, pyloroplasties, with their low mortality and anatomic and physiological reasonableness, are most enticing and the old standby, gastro-enterostomy, is a long way from being ousted from the field and for the occasional operator it still ranks among the safest procedure we can adopt.

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Mimics of Gastro-Intestinal Disease*

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I have chosen this subject to discuss because of the frequency with which one sees gastro-intestinal symptoms where the true pathology is external to the digestive tract. Since time immemorial many complaints and diseases that the "flesh is heir to" have been attributed to some often conjectured pathology of the gastro-intestinal tract, because frequently either at the onset or during the course of a disease functional digestive disturbances occur which at times may be more or less persistent throughout the course of the disease. Hence, the condition is thought to be "stomach trouble," colitis, etc. I think the inception of this mistaken belief dates back to the time when the only medicines at hand were emetics, cathartics, and sudorifics; a time when someone wrote facetiously, "we puke, we purge, we sweat 'em, and if they die we let 'em."

There are, of course, reasons why we have these so-called "referred" symptoms: first, the close proximity of one organ to another, such as the relation of the kidney to the liver, gall bladder, duodenum, and pancreas, or the relation of the female reproductive organs to the lower digestive tract; second, the blood stream, transporting as it does any toxic substances that may get into the blood to each and every organ in the body and thus in turn affecting one or more of these, or acting as a medium in producing chronic passive congestion of the liver in heart failure; third, the nervous mechanism, which is probably one of the most important causes and certainly the most intriguing. I should like to briefly review the theories of the physiology of this nervous mechanism as I feel a knowledge of it enables one to more clearly appreciate why we have "referred" symptoms. The intrinsic nerve supply of the body is a dual mechanism composed of the sympathetic and parasympathetic di-

visions of the autonomic nervous system. The parasympathetic division is again divided into the cranial division, of which the vagus is a part, and the sacral division. The sympathetic division is represented by the thoraco-lumbar segment. This double nerve supply is antagonistic in its action and is considered the cause of referred symptoms to the abdomen, though this is not definitely proven.

According to Mackenzie and Head when afferent sensations travel to the spinal cord the impulse if strong enough will cause the sensation to be referred to another part, such as the abdomen. Head's law explains this by saying that a stimulus from a part of low sensibility in close relation to a part of high sensibility exhibits the pain in the area of higher sensibility. Cannon's explanation, a more recent one, states that the sympathetic system is concerned with maintaining a state of equilibrium of the internal environment and in protecting the organisms from changes in the external environment. Contrariwise, the parasympathetic system is concerned with individual effects upon an organ. There is thus a close relationship between the various levels of the spinal cord, the medulla and mid-brain, which makes possible numerous afferent and efferent pathways between the various organs and the cerebro-spinal system, and in turn to the skin, muscles and superficial blood vessels, thus explaining in part at least "referred" pain.

Some interesting work done by Weiss and Davis and Davis, Pollock and Stone showed that stimuli from a distended organ send impulses to the spinal cord which in turn send efferent impulses to the periphery. These impulses stimulate the sensory endings and the pain impulse is referred back to the spinal cord. These painful impulses may then travel to a different segment of the cord and be felt in a different place. We are all aware of the fact that pain from the gastro-intestinal

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tract is produced not by cutting, but by tension or traction apparently of the peritoneum. Thus, excessive contraction of smooth muscle, such as is seen in a severe spastic colon causes traction on the peritoneum and hence pain.

This same autonomic nervous system must likewise be responsible for the effects of psychological disturbances though the mechanism is not clear. Such conditions as worry, fright and fear must influence the autonomic nervous system in such a way that there is a disturbance in the function of various organs which under certain conditions may be interpreted as pain. In the gastro-intestinal tract pain is a frequent hand-maiden of altered function. However, all individuals do not have the same threshold for pain, thus those with a low threshold feel the pain more intensely.

The specific conditions that I wish to discuss can only be briefly considered though I shall emphasize the more important ones. Undoubtedly the greatest cause of digestive complaints without intrinsic organic pathology is due to psychological factors resulting in what we term functional or nervous indigestion. Mental and emotional shocks, worry, difficulty in facing the realities of life, or an inability to adjust oneself to one's environment are unquestionable causes of nervous indigestion. It seems that the gastro-intestinal tract frequently acts as the shock absorber for these stimuli. Dr. Coyne Campbell has told me that very frequently during treatment of a patient with a neurosis the patient will develop some type of functional digestive complaint. I believe that these people are born with an unstable nervous mechanism; congenital neurasthenics, one might call them. As they grow older life's problems confront them and they are unable to successfully face and solve them, so they take refuge from their inadequacies by developing somatic complaints. This condition may simulate almost any organic trouble and yet the astute clinician should not be long in recognizing the condition as a functional one; however, final diagnosis should not be made before organic pathology has been ruled out. The symptoms may mimic chronic appendicitis, peptic ulcer, or gall bladder disease. Occasionally one sees a case with marked

abdominal distention simulating intestinal obstruction. This usually occurs in women. Gas and belching, constipation and diarrhoea are frequent complaints. There may be disturbances of appetite, rumination, or severe vomiting. These cases may have alterations of the digestive secretions and the sphincter mechanisms of the digestive tract. We know that stimulation of the parasympathetic nervous system will cause increased secretory and motor activity of the bowel which results in an excessive formation of mucus and colic of the intestinal tract. One might talk indefinitely on functional indigestion. There is so much to say that Alvarez has written an entire book on the subject.

Probably the next most frequent condition that may cause predominant gastro-intestinal symptoms is disease in the urinary tract. Both the upper urinary tract and the organs of digestion are supplied by the vagus nerve and the sympathetic nerves and hence any kidney disturbance may be reflected in the gastro-intestinal tract. Acute suppurative diseases of the kidney, urinary calculus, acute urethral obstruction, hydronephrosis, and pyonephrosis may easily mask themselves as an acute intra-abdominal condition for they often are accompanied by local or general abdominal pain, belching, nausea, and vomiting. However, there are usually pathological changes in the urine, though not always constant, and there is frequently deep tenderness over the costo-vertebral area. Chronic conditions may likewise be simulated. Renal and ureteral calculi may cause intermittent attacks of pain in the right lower quadrant which might easily be interpreted as chronic appendicitis. Operation of these cases naturally fails to give relief of the symptoms. This has occurred sufficiently frequent so that some institutions require an urological examination in all cases of unexplained abdominal pain. Gall bladder disease, likewise, may be mimicked by a renal or ureteral calculus, as nausea, vomiting, and right upper quadrant pain are not infrequent. Ureteral strictures have frequently been reported as causing abdominal pain and indigestion, especially in women but the true presence of ureteral stricture is an unsettled question.

Nephroptosis or floating kidney as a

cause of digestive disturbance is a moot question. I should probably obtain an argument from an urologist, yet I believe that most symptoms found in patients with a floating kidney are nervous in type and are invariably exaggerated after some physician has told the patient that she, as they usually occur in females, has a "dropped" kidney. The condition is always seen in thin underweight women of the neuroasthenic type. Chronic nephritis is at times accompanied by anorexia and nausea. Rarely, occult blood is found in the stool from superficial mucosal ulcerations in the gastro-intestinal tract. When uremia supervenes the persistent nausea and vomiting might erroneously be considered as due to gall bladder disease or an obstructing lesion at the outlet of the stomach. All of the aforementioned conditions have dealt only with right abdominal lesions as they are far more frequent. Occasionally, however, disease of the seminal vesicles or left urinary tract involvement, either by stone or disease, may cause not only pain in the region of the descending colon and sigmoid, but symptoms suggestive of bowel pathology. Pain that is severe enough, however, to require the administration of an opiate, almost of itself rules out any intrinsic bowel disease.

Prostatic obstruction and mild degrees of urea retention are not infrequent causes of nausea and vomiting. At times intestinal obstruction may even be simulated. These are all relieved rather promptly after adequate drainage of the bladder is established or the urea retention relieved.

Another organ that frequently masks its disease under the cloak of the digestive tract is the heart. The early symptoms of cardiac disease may be entirely gastric. Gas, belching, sour stomach, inability to eat certain foods, or to comfortably digest a large meal are frequent complaints of the cardiac patient as well as the gall bladder patient. It might be stated that because the belching will temporarily relieve the distress does not mean that the condition is not cardiac. Although these early symptoms are often the result of chronic passive congestion of the liver this is not always true, as they do occur in the absence of hepatic congestion. Nausea and vomiting are frequent accompaniments of cardiac failure so the true cause of the condition

must not be overlooked as digitalis will improve these patients whereas the usual measures directed to the stomach will fail. Digitalis must, however, be given cautiously and judiciously, as an over-dose will cause nausea and complicate the picture. Bacterial endocarditis likewise frequently is associated with nausea and vomiting. Anorexia is not rare in severe heart conditions.

Coronary disease is a rather common cause of severe upper abdominal pain. The frequency is attested to by the many newspaper reports of deaths from so-called "acute indigestion." Because the heart and gall bladder have the same nerve supply the symptoms of one may simulate the other. Anginal attacks frequently give symptoms of gall bladder disease, but gall bladder disease only rarely causes symptoms of angina. True angina is almost invariably associated with a fear of impending death and a definite sensation of constriction in the chest. Nausea and vomiting, violent abdominal pain, a high leukocyte count with a predominance of polymorphonuclear leukocytes may be present with true angina pectoris. An electrocardiogram and a cholecystogram are often helpful aids.

Disturbances of metabolism may cause various abdominal symptoms. Probably the most alarming condition is seen in diabetic acidosis. Severe and protracted nausea and vomiting, intense abdominal pain with tenderness, muscular rigidity, increased temperature and leukocytosis may all be present. Such a group of symptoms may easily mislead one into believing the condition to be a surgical abdomen. All of these symptoms, however, will disappear in a very few hours after the administration of insulin in proper amounts unless the condition be truly a surgical one. Hyperthyroidism and hypothyroidism are other metabolic disturbances in which the chief complaints may be gastro-intestinal. In the former there is an increased appetite and increased intestinal motility. Nausea, vomiting, diarrhoea, eructations, abdominal distention and cramping, especially during a thyroid crisis, are quite common. In a series of cases reported by Tinker one-third of the cases complained of gastro-intestinal symptoms and ten per cent had persistent nausea and vomiting,

while ten per cent had a severe diarrhoea. In hypothyroidism constipation is the rule. This is more frequent in women, though it may be seen in men, usually in middle or adult life. Proper thyroid medication will relieve these patients.

One might classify the above conditions under the group of endocrine diseases, but I prefer to think of them separately. The chief endocrine disturbances that mimic digestive diseases are lesions of the adrenal glands (Addison's disease), lesions of the parathyroid glands and the gonads. In Addison's disease anorexia is an early complaint while later we invariably have attacks of nausea, vomiting and diarrhoea which are often intractable to even the newer adrenal extracts. In parathyroid disease of the hypocalcemic type one sees indefinite indigestion and mushy stools in addition to headache, somnolence, vertigo, and muscle pains. Gardner feels these symptoms are due to the disturbed calcium metabolism and this may be because of its effect on the nervous system. In hypercalcemia one sees anorexia, nausea, vomiting, abdominal pain and constipation. Disease of the gonads may be a more frequent cause of digestive upsets than is commonly believed. We are all acquainted with the effect of disturbed menstrual function in women, even without operation on the ovaries, on the digestive tract. The hypogonad or eunuchoid type complains of constipation, abdominal pain, gas and distention, nausea, vomiting and occasionally diarrhoea. The pituitary type is similar but the symptoms are less severe. I should like to state a word of warning, however; I feel that without definite evidence of pelvic pathology surgery should never be advised. Furthermore, all gastro-intestinal studies must be negative and one must assure oneself that the condition is not functional before attributing the symptoms to the pelvis.

There are many other conditions that mimic gastro-intestinal disease, but I shall conclude by mentioning only a few. Allergy, according to Rowe and others may cause any symptoms seen in intrinsic gastro-intestinal disease, such as belching, nausea, vomiting, diarrhoea, constipation, pain, etc. The symptoms and the time relation to eating may be such as to simulate peptic ulcer, gall bladder, or intesti-

nal tract disease. Personally, I have not found this condition common in the absence of other allergic manifestations, which observation coincides with a recent report by Davidson. A trial use of adrenalin, skin tests and diet elimination may at times prove worth while.

Migraine equivalent or so-called abdominal migraine may prove a puzzling condition, though fortunately it is not frequent. In these cases the pain is often located in the mid-epigastric region and may be accompanied by severe nausea and vomiting. There is no fever though there may be some muscular rigidity. These patients obtain no relief from food or alkalies. Often they give a previous history of migraine or hemicrania and occasionally it is associated with the attack of abdominal pain.

Other conditions that should be mentioned as causing abdominal chief complaints at times are brain tumor, spinal cord tumor, lead poisoning, unrecognized "strokes" as recently reported by Alvarez, gastric crisis of tabes, pneumonia, diaphragmatic pleurisy, pernicious anemia, pellagra, sprue, herpes zoster, ventral hernia, and hyperinsulinism.

CONCLUSION

Abdominal pain and digestive complaints are usually due to abdominal disease, but the exceptions are sufficiently frequent so that we must at all times take a careful history and cautiously evaluate all of the facts including the personality, lest we make a grave error in our diagnosis and hence in our advice and treatment. It seems that we are seeing more and more extra gastro-intestinal conditions with predominating digestive tract symptoms. One must be aware of these lest the pitfall be dangerous.

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Intestinal Parasites in Children of Tulsa and Vicinity*

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The question of intestinal parasites in children is presented so often to the pediatrician and the general practitioner by anxious mothers, each one offering such a wide range of symptoms with no conclusive evidence of infestation, that we decided to make a study of each case whose chief complaint was "worms"; and to these we have added a small number of patients in whom we could find no cause for stationary weight, anorexia, diarrhea, and restlessness at night.

Table I shows the chief complaints and the frequency with which they were ascribed to the infestations.

TABLE I. Occurrence of the Chief Complaints in Twenty-Three Cases of Parasitic Infestation.

Anemia	9
Restlessness at night	7
Diarrhea	5
Undernourished	5
Pruritis ani	(only) 4
Nervousness	1
Anorexia	4
Indigestion	1

Secondary anemia was the most frequently observed symptom, while puritis ani was present in twenty-five per cent of the cases of oxyuris vermicularis infestation.

The stools of one hundred and seventy children were examined. Twenty-three, or a little over thirteen per cent, were positive for intestinal parasites. Table II shows the occurrence of the respective parasites in our series of cases.

TABLE II. Occurrence of Parasites in Twenty-Three Cases of Parasitic Infestation.

Oxyuris vermicularis	16
Giardia lamblia	1
Taenia solium	1
Ascaris lumbricoides	2
Necator Americanus (from Old Mexico)	1
Trichomonas hominus	1
Amoebiasis	1

Classic cases of parasitism, which we

are prone to think of when considering any parasite, are characterized by marked emaciation, eosinophilia, and anemia. Perhaps the most striking fact which our study has disclosed is that parasitic infestations may occur in children when symptoms are mild or vague, with practically no eosinophilia (Fig. 1), and certainly not a consistent anemia. In those cases in which anemia does occur it is usually of a mild secondary type. Only one of our cases (taenia solium infestation) showed marked eosinophilia and anemia (Fig. 1), and you will notice that even in this case the blood picture does not approach those of the classical cases. Two cases of oxyuris vermicularis showed an eosinophilia of nine per cent, but this was believed to be due to an allergic condition in both individuals.

Figure 2 shows the forms of the respective parasites which one may expect to find in the stools of an infested individual.

The adult female oxyuris vermicularis may often be found about the anal region, particularly at night; it may also be found in the stool, or the ova may be released and found free in the stool.

The adult giardia lamblia may be found in the stool, but it is never motile since it inhabits the small intestine and is dead by the time that it is voided with the faeces. The encysted form is found more frequently than the adult.

The segments of the adult taenia solium are usually found in the stool, however these are often ruptured and the ova may be found. The ova of taenia solium and taenia saganata are very similar, but the proglotids and scolexes may be quite easily differentiated.

Both the fertilized and unfertilized ova of ascaris lumbricoides may be found in the stool of an infested individual, and even an experienced worker may overlook the unfertilized form.

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The adult *Necator Americanus* may be found in the stool, though the ovum is usually the form which is present.

Both the vegetative and encysted forms of amoeba may be found in the stool. The cysts are more easily identified when stained.

Trichomonas is easily recognized in the smear from a fresh stool; a drop of grams iodine when added to the smear greatly facilitates the identification of the species.

One negative stool examination is not sufficient evidence that a child does not harbor parasites. Because of the infrequency with which oxyuris and ascaris deposit their eggs, we make a practice in our office of examining negative stools three consecutive days. Two direct smears are examined first. If these are negative, concentration and staining methods are resorted to. William S. Stone's method for staining trophozoites¹ has proved a very satisfactory method of preparing permanent specimens.

TREATMENT

Ascaris lumbricoides and *Necator Amer-*

icanus: The treatment for *ascaris lumbricoides* and *Necator Americanus* is the same. Give a light six p. m. meal of weak tea, toast, and jelly—with no proteins.

At six a. m. give 0.2 grams of hexylresorcinol (in hard gelatin coated pills) for each two years of age. The maximum dose is one gram.

Wait four hours before allowing food, and then give a light carbohydrate meal.

Twenty-four hours after giving hexylresorcinol give a saline purge.

Repeat in five weeks.

Hexylresorcinol was first available in pills which were not gelatin coated. They were not very satisfactory in the treatment of children, because frequently the coating would melt before the pill was swallowed, and the hexylresorcinol would produce a severe stomatitis. Fortunately, we did not experience this condition in our practice, but others have reported such cases, and the drug was withdrawn from the market for some time. The new gelatin coated pills are quite satisfactory.

Oxyuris vermicularis: The treatment

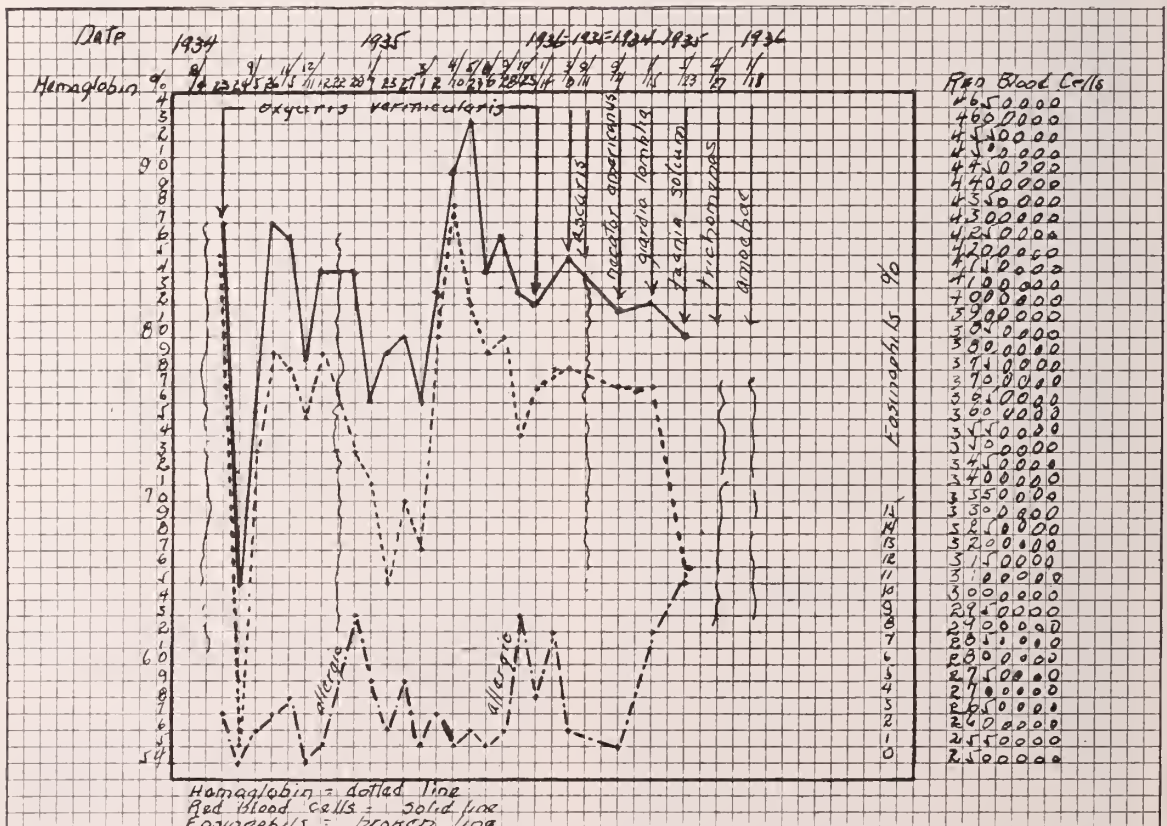


FIGURE 1

for oxyuris vermicularis is the same as for ascaris lumbricoides with the addition of the following:

The evening that the hexylresorcinol is given, give a soap suds enema to cleanse the lower bowel, and follow with an enema of one pint of 1-1000 solution of hexylresorcinol at low pressure. The patient is requested to retain the solution ten or fifteen minutes. The only solution of this kind on the market at the present time is the antiseptic ST 37, which is satisfactory; however, the glycerin which it contains makes it difficult to retain as an enema, and a solution without glycerin has been promised in the near future.

Repeat the above in forty-eight hours. A light coating of zinc oxide ointment should be applied to the anal region, and covered with a T bandage.

Amoebae and trichomonas: Feed a high carbohydrate diet.

Give four grains of carbaminophenylarsonic acid (Carbasone) twice daily for ten days.

Trichomonas intestinalis has been disregarded as a cause for intestinal disturbances, and branded non-pathogenic. However, our case suffered from recurrent attacks of diarrhea and constipation with blood in the stool for a year before he was seen in the office and motile forms of trichomonas were found. Appropriate treatment brought immediate and permanent relief.

Taenia solium: For three or four days before administering anthelmintics, feed a high carbohydrate, low residue diet.

Administer milk of magnesia or magnesium citrate each evening.

On the fourth morning, before allowing food, give two to eight grains of Pelletierine Tannate.

Four hours later, give one-fourth to one ounce of castor oil.

Have patient pass stool in vessel containing warm water to avoid breaking of the segments when they touch the water. Contact with cold water will cause the

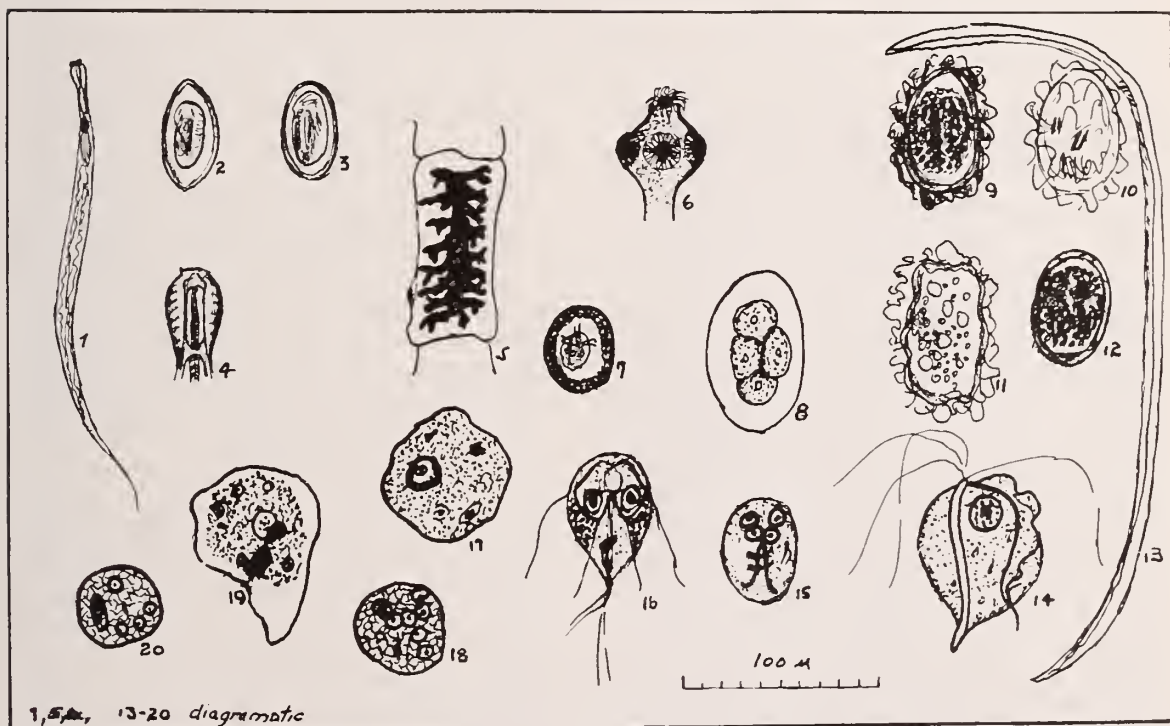


FIGURE 2. (1) Adult, female oxyuris vermicularis; (2), (3), ova of oxyuris vermicularis; (4), head of oxyuris vermicularis; (5), proglotid of taenia solium; (6) scolex taenia solium; (7) ovum of taenia solium; (8), ovum of Necator Americanus; (9) median focus; (10), surface focus; (11), atypical unfertilized egg; (12), with outer envelope—all ascaris lumbricoides; (13), adult ascaris lumbricoides; (14), vegetative form of trichomonas hominus; (15), encysted, and (16) vegetative form of giardia lamblia; (17), vegetative, and (18) encysted form of amoeba coli; (19), vegetative, and (20) encysted form of endamoeba histolytica.

worm to break, and the head will not be removed.

Examine carefully for the scolex.

Giardia lamblia: Treatment for giardia lamblia has been unsatisfactory, but bismuth subcarbonate and subsalicylate in small doses at four-hour intervals over a period of two weeks relieves the symptoms of anorexia, flatulence, and diarrhea, and reduces the number of organisms in the stools.

This is another parasite of the Flagellate class, which has been considered non-pathogenic. Our patient suffered from secondary anemia, anorexia, lassitude, and was markedly undernourished. Following treatment he made an excellent gain in

weight, and a complete change in demeanor was noted.

CONCLUSION

We realize that this series is comparatively small, but we feel that it does indicate that a revision of our attitude toward the prevalence of intestinal parasites in children in this section of the country (and our series is composed of cases from above the average homes) is in order, and the adoption of stool examinations as a general procedure would bring quick relief of symptoms of patients and the anxiety of mothers in many cases of often mild, but persistent and irritating intestinal distress and nutritional deficiency.

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Factors of Safety in Gall Bladder Surgery*

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It would seem worthwhile to call attention to some of the factors contributing to safety and to satisfactory end results in the surgical treatment of patients with disease of the gall bladder and of the biliary tract in general. Perhaps the factor of greatest importance is the diagnosis. The patient with questionable disease of the biliary tract will probably not be greatly relieved by surgery, if at all—while the patient who has well defined biliary tract disease as evidenced by a thorough history and physical examination reinforced by positive laboratory tests will almost surely obtain satisfactory relief. In the realm of surgery of the biliary tract today many lives are being saved as the result of more accurate pre-operative clinical investigations which help to establish the correct status of the patient's condition and to point the way to the proper methods of rehabilitation so that he may be subjected to the necessary surgical procedure with the minimum of risk and with the maxi-

mum opportunity for a satisfactory end result.

The various surgical measures employed for the relief of biliary tract disease have been fairly well standardized and are well known. Unsatisfactory post-operative results occur at times, not because of poor surgery but perhaps because of poor judgment on the part of the surgeon especially as to the degree of disease present or else as to the patient's condition for the surgical measures contemplated.

The presence or absence of gall stones doesn't necessarily decide the question for or against operation. The patient's disability for the performance of daily tasks should be the deciding factor. However, the relatively frequent association of comparatively symptomless cholelithiasis with hepatitis and with malignancy of the gall bladder may justify cholecystectomy, even in the absence of marked symptoms.

The diagnosis should be made by use of all the practical facilities at our disposal. Especially important is the question of

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liver damage. This can now be fairly well determined by means of the general check-up of the patient, plus the liver function tests. The pre-operative preparation or rehabilitation is most important. It is unwise to send the patient with well defined gall bladder disease to the hospital one day and operate upon that patient the next day—especially is this true if the patient be jaundiced or dehydrated, emaciated and weakened as a result of vomiting and toxemia—or if there be evidence of definite liver damage. I feel that pre-operative preparation is as necessary and vital to success in surgery of these patients as it is in the preparation of the toxic goitre patient for surgery.

Mackey says that the history must be typical and should include pain. No evidence, he says, has been obtained to show that flatulent dyspepsia or food selection indicates gall bladder disease or is likely to be relieved by removal of the gall bladder. Cholecystographic changes must be definite. A considerable proportion of patients are unrelieved by removal of the stoneless gall bladder. The therapeutic failures are due to symptoms having their origin outside the gall bladder. He adds that the results of surgical treatment of cholecystitis without stones are relatively unpredictable in the individual case—even by the most modern laboratory procedure.

In cases of chronic disease of the gall bladder the surgeon can frequently choose the time for operation after a sufficient period of pre-operative rehabilitation of the patient—with a minimal surgical risk.

Crile says that patients with acute cholecystitis are poor surgical risks. Dehydration and acidosis due to persistent vomiting and toxemia—following absorption of infected materials and disturbances of liver function due to associated hepatitis—all tend to decrease the patient's general resistance.

In considering the diagnosis and management of acute cholecystitis, Roscoe Graham emphasizes the importance of ruling out perforated ulcer, acute appendicitis and acute pancreatitis, immediately, if possible. The differential diagnosis between gall bladder disease, renal disease, coronary thrombosis and respiratory diseases is not so urgent that an immediate operation need be considered.

An attack of acute cholecystitis is usually preceded by a long history of gall bladder indigestion accompanied by one or more attacks of abdominal pain which may be interpreted as due to biliary colic. The radiation of pain and the association of pain and tenderness which remain constant in the right upper quadrant with absence of rigidity elsewhere help to establish the diagnosis.

It is imperative to differentiate between acute cholecystitis and acute cholangitis. The presence of jaundice and fever and no palpably enlarged gall bladder demands urgent drainage of the biliary system by the simplest and least traumatic operative procedure. In other words, operation is urgent in acute cholangitis.

Conservative treatment of the patient with acute cholecystitis demands careful observation. The essential features of such treatment consist in withholding all nourishment by mouth—the administration of glucose and chlorides intravenously up to 3000 cc. or more in twenty-four hours—morphine to control pain and hot packs to the abdomen and lower chest to promote relaxation, relieve pain, and to increase muscular tone in the bowel thereby relieving distension quietly and easily without undue stimulation of peristalsis. Under such conservative treatment the acute attack may subside to such an extent that cholecystectomy or other curative measures may be preferred in a reasonable time with a minimum of risk.

If, instead of improving under conservative non-operative measures, the patient becomes more toxic with increasing fever and leucocytosis, then cholecystostomy with the minimum of traumatism of the involved tissues will give temporary relief with very little risk. Cholecystectomy can be performed at a later date when the infection of the biliary tract has subsided and the liver function has improved.

Judd said that biliary calculi in themselves have no effect on the prospect of cure, providing the acute or chronic process receives attention before complications arise. It is unknown whether or not the formation of biliary calculi is a factor in the production of malignancy but the two conditions are associated often enough to justify recommending the prompt removal of all biliary calculi. Calculi are

frequently directly responsible for necrosis of the gall bladder or cystic duct, obstruction of the biliary channels, formation of abscess or fistula and other serious complications.

According to Judd the majority of stones in the biliary tract unquestionably arise in the gall bladder with the exception of the calcium bilirubinate stones which are formed in the ducts themselves—all true intra-hepatic stones probably being of the latter type. This is one of the best arguments for removal of the gall bladder when its condition is such as to require surgical intervention and when its removal is at all practicable. The chief contra-indications will be the presence of malignancy in the biliary ducts or encroaching on them or of a tendency toward benign stricture of these channels.

Judd emphasized the difficulty at times in palpating small stones impacted in the ampulla or free and floating in the dilated common duct and of differentiating between calculi and enlarged lymph glands in the gastro-hepatic omentum. If there be suspicion of stones in the common duct there is justification for opening the duct at the time of the primary operation on the biliary tract.

Usually drainage of the common duct by a T tube will be advantageous where there is reason for opening the duct.

The presence of jaundice increases considerably the risk and difficulties of surgery of the biliary passages. Hubley, discussing the pre-operative and post-operative treatment of jaundiced patients, says that the chief dangers of operating upon these patients are hemorrhage, uremia, hepatic insufficiency and disturbance of acid-base balance. He emphasizes the necessity for a careful history with reference to familial tendencies toward jaundice and hemorrhage. A careful physical examination emphasizing the evaluation of the cardio-vascular and respiratory systems, electro-cardiography and complete urine study including twenty-four hour fluid intake and output, are very important. Bleeding and coagulation time estimations are always important in these cases. The icterus index and liver function tests, especially the latter, give valuable information.

Liver function tests should be done before operation upon the biliary passages, even in the absence of jaundice. Evarts Graham considers that patients with fifty per cent dye retention at the end of thirty minutes are most likely to be the victims of hemorrhage or liver shock. Surgery in such cases should be delayed until the patient is carefully prepared by large amounts of intravenous glucose and by repeated small blood transfusions to increase liver resistance.

Judd and his associates emphasized the value of blood transfusions as a pre-operative and post-operative measure in jaundiced patients, especially in jaundice with an associated anoxemia of the anemic type. The intravenous administration of calcium chloride for several days before operation is of considerable value in the prevention of hemorrhage. Large amounts of ten per cent glucose intravenously together with a high carbohydrate diet helps greatly in preparing these patients for successful operation. The chief causes of death are hemorrhage and hepatic insufficiency.

According to Judd, the cause of hemorrhage in jaundiced patients is not due solely to the presence of bile in the blood and other tissues, nor is the danger of hemorrhage always in direct ratio to the degree of jaundice. The hemorrhagic diathesis in the presence of jaundice is more likely attributable to co-existent liver damage resulting in deficiency in the part played by the liver in the mechanism of coagulation of blood.

Choice of anesthesia in gall bladder surgery is important. Prolonged, deep, general anesthesia is not advisable. One of the gas anesthetics is preferable, especially those with a high oxygen content and reinforced, if necessary, by local or regional block or spinal anesthesia except in patients with hypertension or obesity. Crile believes that blocking the sympathetics in the operative field by injecting novocain through the posterior peritoneum in that area, does much to prevent post-operative painful indigestion.

A most important factor in satisfactory gall bladder surgery is an adequate incision which permits proper exposure of the operative field without the necessity of powerful retractors and rough handling of

the tissues. Too small incisions tend only toward operative difficulties and post-operative complications. The tissues about the operative field must be kept covered with moist warm gauze and gently pushed and held aside without bruising. Bleeding must be controlled as the operation proceeds. Careful, safe surgery cannot be performed if the operative field is obscured by any considerable amount of blood. This applies especially to surgery involving the gall bladder or the bile ducts. The cystic and common ducts must be clearly visualized. The cystic duct must be isolated carefully and ligated without crowding the common duct, keeping in mind the anomalies of these structures and the frequent distortion of all the landmarks in the gall bladder area as the result of disease of the biliary tract or of surrounding structures. Crile reminds us that the gall bladder should not be opened during its removal, that the liver should not be traumatized and that the gall bladder bed should be closed with fine catgut. He prefers drainage in all cases preferably from Morison's pouch through a stab wound to the right of the incision.

Patients with long standing obstruction of the common duct are bad operative risks. In such cases cholecystostomy is often a life saving measure. Decompression of the gall bladder or common duct must be accomplished slowly to prevent the development of hepatic insufficiency.

Best and Hicken made a number of clever observations concerning the action of the choledochal sphincter by the injection of lipiodol into the different biliary radicles at operation and during the convalescent period. As a result of these observations the authors feel that many of the cases of persistent pain and discomfort following cholecystectomy may be explained on the basis of a dyssynergia of the common duct sphincter. They conclude, therefore, that before surgical exploration of the choledochus is undertaken for the relief of such persisting symptoms, these patients should be placed upon a careful medical program consisting especially of such agents as atropine, the intraduodenal instillation of magnesium sulphate, or of fats such as olive oil, in order to overcome the spasticity of the sphincter of Oddi.

Attempting to explain symptoms that persist after cholecystectomy, Weir and Snell conclude that erroneous diagnoses and imperfect selection of cases are responsible for a majority of such symptoms. At operation a thorough examination of the common duct, liver and pancreas are essential. Recurring post-operative colic offers the greatest difficulty in diagnosis and treatment. This is more frequently attributable to stones in the common duct and to residual infection in the ducts, liver and pancreas.

Occasionally a post-operative colic is not satisfactorily explained except upon a neurogenic basis. Paravertebral nerve block, splanchnic nerve block or section of the splanchnic nerves are measures that have been suggested for the control of pain in this type of case. Judd considered prolonged drainage of the common duct with a T tube the best procedure in such cases.

Not infrequently cholecystectomy is followed by troublesome distension of the intestines with gas and at times by nausea and vomiting. Here it is well to withhold food or medication by mouth and to employ gastric lavage if vomiting be present. The patient's nutritional and fluid requirements are met by the intravenous administration of large quantities of ten per cent glucose solution. Post-operative hemorrhage is controlled by repeated blood transfusions. The distension is best controlled by gentle stimulation of peristalsis by means of moist hot packs to the abdomen. I feel that complicated, so-called high enemas and powerful drugs designed to relieve intestinal distension are usually neither necessary nor desirable.

SUMMARY

1. Accurate diagnosis is essential if the end results in gall bladder surgery are to be satisfactory.
2. Pre-operative rehabilitation of patients suffering with advanced biliary tract disease is of primary importance.
3. The pre-operative use of intravenous glucose and calcium chloride and of blood transfusion does much to reduce the incidence of operative and post-operative hemorrhage and of post-operative hepatic insufficiency. These measures are especially indi-

cated if the patient be jaundiced or if there be evidence of marked liver damage.

4. Only conservative operative measures are indicated in the presence of severe, acute biliary tract infection and in cases of long standing marked obstruction of the biliary channels.
5. The operative technic must be such as to permit careful, accurate surgery and to reduce operative trauma to a minimum with consequent reduction in the need for complicated post-operative treatment.

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Study of Etiology and Diagnosis of Peptic Ulcer*

F. M. DUFFY, M.D.

ENID

In a brief discourse on a study of the cause of peptic ulcer I am attempting to assume rather the critical side of this subject. It is said that you should not attempt destructive criticism on any problem unless you are able to offer constructive criticism. However, in dealing with this subject I am going to assume the position of destructive criticism today and reserve the right at a later date to offer some of my views on constructive criticism.

In the process of research on the cause of peptic ulcer probably one of the first theories advanced was the mechanical or traumatic theory. In this it was argued that foods taken too hot or too cold had a tendency to cause some change in the gastric or duodenal wall, which resulted in ulcer. Also it was theorized that small microscopic particles of metal lodged in the mucosal wall were the origin of ulcer. The reason for this later theory was based on the fact that before the days of our factory prepared foods ulcers were almost unknown quantities. This theory is largely discarded today. However, while it is not a primary cause of ulcer, it is a

thing to be remembered as a contributing cause, for it could be a factor in the weakening of the gastric or duodenal mucosa for entrance of infection.

The chemical theory is one that has more scientific argument in its favor than most any offered. However, the diversity of opinion as to how much it has to do with the primary cause of gastric and duodenal diseases makes it considerably a theory rather than a scientific fact. In the early experimental work with the study of gastric contents both from human and animal much of the work lent evidence to the fact that hydrochloric acid was the great factor in the cause of ulcers. In man the majority of cases of ulcer carried an increased HCl content. In animals when traumatic ulcers were produced they endured but not for a very long time and all eventually resulted in healing. However, in more recent years there have been animal experiments performed in which increased HCl content apparently did not interfere with the healing of artificial ulcer.¹

But when the peptic enzyme content was increased the healing of the ulcer seemed more prolonged.² Nevertheless, the

*Read before the Section on General Medicine, Annual Meeting, Oklahoma State Medical Association, Enid, April 7, 1936.

ulcers would heal. In general all animal experimental work which attempts to show that HCl or digestive juices are the main factors in cause of peptic ulcer, is unsatisfactory, chiefly because in nearly all cases the ulcers heal in a reasonable length of time. Besides it is hard to conceive that normal chemical functions of the body should become pathogenic or be a creator of pathology. The failure of the chemical adjustment to completely satisfy the base of peptic ulcer must preclude a foreign living element which is acting behind the scenes in making an ulcer an ulcer. After all I am very much convinced that a peptic ulcer is the terminal pathology of acute or chronic gastritis or duodenitis. It is probably very true that we may see twenty cases of acute or chronic gastric or duodenal trouble in which nineteen may subside after brief time and treatment and one terminate in a peptic ulcer. Dr. Judd³ has operated on diagnosis of peptic ulcer and when he examined the duodenum found no ulcer, but did find a case of infection of the duodenal mucosa, or a duodenitis. Consequently, peptic ulcer, gastritis or duodenitis are apparently not dependent upon HCl or gastric ferments as the primary cause.

There is a physiological factor which enters into the problem which never has been taken into consideration. Namely, the effect that the mental status of the patient has to do with the alteration or fluctuations in the gastric secretions. As you all know that great Russian physiologist, Pavlov, in a series of experiments on dogs which were trained, was able to prove the effect of brain stimulation on the bile and pancreatic juices. The training of the animals to the number of rings of a bell identified in the brain of that animal whether or not he was going to get something appetizing to eat. His experiments showed that through the organ of hearing, the registered ringing of a bell a definite number of times created a mental impression in that dog that he was about to receive some food. Incidentally, upon this stimulation the pancreatic juices flowed freely. This he was able to record through a tube connected with the pancreatic and bile ducts.

In 1924, remembering Pavlov's experiments, I was rather anxious to note if there was any change in HCl content in

psychopathic patients of a passive, contented nature and those of an irritable, high strung and worrisome nature. I selected twenty-five representatives of each group. I administered a test meal to each of them and following the usual one-half hour interval extracted stomach contents by tube. Almost consistently I found the passive, contented individuals were suffering from hypo-acidity ranging from ten to fifteen degrees HCl and total acidity between twenty to twenty-five degrees. In the case of the other group I found that the HCl content ranged from thirty to seventy degrees and total acidity from fifty to ninety degrees based on N/10 NaOH neutralization. All of these patients were carefully examined and were apparently normal physically in every other respect. None of these individuals showed any evidence of pathology in the gastro-intestinal tract. But their mental capacity was of such a nature it was very helpful in obtaining these results.

Dr. V. E. Levine, Professor of Bio-Chemistry at Creighton University Medical School, carried out a similar set of experiments on students on two different occasions. On students when they were mentally comfortable and again on them after a mental strain, especially after semester examinations. He told me that he found a rise in the acidity content of those students under a strain and normal or below normal in those who were mentally comfortable. Consequently, I am convinced that the finding of increased acidity in these cases is not a primary cause of the ulcers but a secondary factor in the program of symptoms.

This leads up to the point of argument as to the physiological cause of peptic ulcers. There is a general belief in the profession that many people possess a certain type of personality that predisposes one to ulcers of the stomach. There may be some truth in this but we draw these deductions on the observation of the patient when he is suffering.

If we could study the variations of people in their normal status in the numbers that we study people when they are suffering we might find a wide range of physiological variations. Of the vast number of individuals who suffer from nervous or altered personality tendencies,

there are only very few who develop or suffer from peptic ulcer. If there is anything in the personal make-up of an individual which may have to do with the cause of peptic ulcer it must be only of a secondary nature.

Because of the fact that we have a circulatory mechanism of the stomach which results in endarteries, the theory of endarteritis⁴ has been advanced as the cause of peptic ulcer. Pathologically this has a basic foundation for argument. However, this must be of an embolic nature. Emboli occurring in these small vessels must be the result of infection because conditions of a chronic nature such as this are usually associated with focal infection.

In the last few years allergy has been receiving some recognition in association with peptic ulcers.⁵ However, symptoms associated with allergic reactions vary considerably and are more spasmodic. But I have noted that individuals who have not responded to the routine medical treatment for peptic ulcers would respond when certain foods to which they are sensitive were removed. I have noticed that tobacco is a grave offender in many cases. But individuals with ulcers of stomach or duodenum do not get well on simply removing the allergic offender. They have to be treated for their disease.

In my opinion of all the theories and arguments, based on scientific investigation so far advanced, the bacterial basis as the cause of peptic ulcer has the most logical foundation. In the first place the pathological cause of this condition shows tissue reactions which are only associated with bacterial invasion. When we study ulcers we do not bear in mind that this is probably the terminal pathology of a previous infection of the mucosa. As stated before, surgeons³ have operated on the basis of a classical diagnosis of peptic ulcer to rather find a typical duodenitis or gastritis.

However, these cases were probably operated in the early courses of the disease rather than in the terminal state of it. In the second place the frequency of gastro-jejunal ulcers⁶ is more plausibly explained on the ground of a transplanted infection to a new injured area.

Rosenow in several instances by experiment showed the focal infection source of

these pathological conditions. However, I am convinced to a great degree that a specific bacterial etiological agent is responsible for this pathological process. I am further convinced that the agent has the specific capacity of producing a pathological condition from duodenitis and gastritis in the acute stage to a terminal condition either so-called acute or chronic ulcer, depending upon time.

In summing up I would say that all identified theories, except the bacterial, of the cause of peptic ulcer are secondary, contributing, or predisposing causes or conditions.

As to the diagnosis of peptic ulcer, we should depend upon two great sets of factors to make a reasonable positive diagnosis. We should depend upon a positive set of criteria and a negative set of criteria.

In the case of positive criteria every history should be more or less definite. The food and alkali relief of pain is of a characteristic nature. We are told that this time factor here helps us to determine the location of the peptic ulcer, that is, whether it is duodenal or gastric. A physical examination as a rule does not tell us much as to the presence or absence of an ulcer except that it eliminates the possibilities of having any other pathological condition. Analysis of the gastro-intestinal tract contents is usually a routine procedure. In the examination of gastric contents, in the presence of a test meal, we note the relation of the intake and the amount extracted, the relative percentage of mucus, the acidity content and whether blood is present or not. Analysis of the stool is for the purpose of detecting decomposed blood in it. Radiographic study gives us a picture of motility, irritability, and presence or absence of a deformity from an ulcer of the stomach or duodenum.

Now if the findings from the history, physical examination, laboratory analysis and radiographic study are all positive in their sphere, then the sum total establishes a set of positive criteria which makes the diagnosis of ulcer an easy thing.

However, in many cases of abdominal complaints the whole picture is not quite so simple. We may have an imperfect history of ulcer symptoms, the laboratory findings may be variable from the true

picture and the radiographic study may show increased motility and irritability but no deformities.

In such a case in order to make a diagnosis you must depend upon a set of negative criteria to reach a conclusion as to the nature of your gastric disturbance. By this I mean tests for syphilis must be negative. Diseases of the blood forming organs must be negative. Evidence of disease of the hepatic system is negative. Evidence of cardi-renal disease must be negative. Evidence of physiological or pathological disease of the nervous system must be negative. Evidence of glandular disease must be negative. By all means be sure that you do not have any allergic condition present. If you have eliminated the possibility of any other existing diseased condition then in my opinion your diagnosis will have to depend upon a condition existing, which may be any stage from a gastritis or duodenitis to a definite ulcer.

In a set of symptoms which are somewhat atypical for peptic ulcer I have found frequently that the condition was due to an allergic reaction to some food or toxic substance extraneous to the body. Elimination of these offenders by skin testing and by the leukopoenic index^{6 7} in many cases was the therapeutic test of the presence or absence of an ulcer. In every case I feel that allergy investigation should be made. In a few cases I have found when a positive diagnosis was made that some allergic food or toxin would interfere with the course of treatment and results could not be obtained. I have noticed that tobacco seems to be the most troublesome factor.

May I conclude by summarizing:

1. That all causes studied, except the bacterial, are contributing and predisposing causes.
2. That peptic ulcer is the terminal pathological state of gastritis or duodenitis.
3. That the etiology is a specific bacterial germ, which will be eventually identified.
4. That the diagnosis depends upon a positive or negative set of criteria.
5. That allergic reactions should be studied on all cases.

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The Physician's Place in the Health Program

W. W. Bauer, Chicago (Journal A. M. A., Aug. 15, 1936), shows that the place of the physician in a community health program must be a central one. Public health relies in the last analysis on medical science. It is true other sciences are called on and that nurses, statisticians, educators, administrators and engineers make their contributions to a program of public health, but without the correlation furnished by medicine, progress toward better health would not ensue. A successful program toward better health demands idealism, but it must also be a practical movement. The feet of the worker must be firmly planted on solid ground. The experience of the physician with the complexities of the human organism and the endless complications involved in its relationship to the environmental cause him to develop a spirit of conservatism and caution. The conservatism of the profession makes it an easy mark for lampoons by the thoughtless or the unscrupulous, but this very conservatism can be a valuable balance wheel which will help to keep the practices of public health within the bounds of scientific accuracy. Idealism and practical experience require opportunity for expression. No one in the community has a greater opportunity than has the physician. The medical profession as a whole has always accepted its obligations toward the public in a spirit of idealism tempered by experience. Public health, in common with all other branches of medicine, rests on research. Without research there is no progress. The medical profession, individually and collectively, has always been in the forefront of research. The existence of the Scientific Assembly and the Scientific Exhibit of the American Medical Association are in themselves powerful stimuli to research. The Journal of the American Medical Association and the eight special journals offer opportunity for the publication of significant contributions. The Association itself makes grants in support of research. Significant contributions to research are made by representative members and Fellows of the Association and their allied workers through research laboratories in medical schools, governmental establishments and other institutions. Organized medicine has not only encouraged and participated in research but has defended it against the villainous attacks of the antivivisectionists, who deck themselves in furs and feathers while they shudder at the thought of stimulating the muscle of a dead frog with an electric current. Legislation intended to cripple medical research has been fought in the Congress of the United States and in the several state legislatures by research workers and medical societies. The influence of organized medicine has consistently been exerted in defense of an apathetic public which has not yet realized how its security is threatened by a small noisy group of fanatics. The physician knows community health needs in a peculiarly intimate manner possible only to physicians and the clergy. The physician must have a central place in the public health program because

he commands public confidence. Another field in which the physician can make great contributions, has made them and continues to make them, is health education. Since the very beginning of medical practice, it has been the habit of physicians to advise their patients not only about treatment but about prevention. This has been a person to person relationship, and this relationship will continue to be necessary in our attacks on the great health problems of today; namely, cancer, apoplexy, kidney disease, syphilis, diabetes, heart disease and the evils of self diagnosis, self medication and the nostrum racket. The fight against quackery has been prosecuted with more vigor and success by the medical profession than any other agency. The picture painted is not a complete canvas. Not every physician measures up to the ideals that have here been pictured, but the profession, as a whole, may fairly be said to have done so.

Vesico-Intestinal Fistula, Caused by Foreign Bodies in the Bowel

Robert H. Hearst and Edwin M. Miller, Chicago (Journal A. M. A., June 20, 1936), state that in a careful study of the reviewed cases it was very difficult in many instances to determine the origin of the foreign body: (1) whether it traveled by way of the gastro-intestinal tract and for some reason hesitated in a portion of the bowel, (2) whether it became lodged in a diverticulum causing an inflammatory reaction with adhesion to the bladder wall and finally ulcerating through, or (3) whether the foreign body was introduced into the bladder through the urethra and ulcerated through the bladder wall, involving the wall of the intestine and in this way producing a fistula. Considering the large number of foreign bodies found in the bladder, including stones which cause little or no change in the bladder wall, it is quite evident that the production of the fistula in this way is not very common. The authors have been able to visualize the intestine a few times by passing a ureteral catheter into the bladder end of the fistula and injecting sodium iodide. The pre-operative diagnosis of vesico-intestinal fistula with present-day urologic methods is not difficult. The diagnosis of the cases produced by foreign bodies may not offer much difficulty if the foreign body can be found in roentgenograms or seen with a cystoscope. In their case this was not possible. The chicken bone that produced the fistula was surrounded by a large inflammatory mass involving the intestine and failed to show in the roentgenogram. The part of the bone that lodged in the wall of the bladder did not protrude into the bladder and could not be seen with a cystoscope.

Fractures of Patella: Results of Total and Partial Excisions of Patella for Acute Fracture

William E. Blodgett, Detroit, and Robert D. Fairchild, Rochester, Minn. (Journal A. M. A., June 20, 1936), propose the method of subtotal resection of the patella or when indicated, total excision of the patella. Briefly they advocate the excision of the

upper fragment or fragments in those cases in which there is a sizeable lower fragment left for attachment of the quadriceps tendon and aponeurosis. In those instances in which the patella has been markedly comminuted with wide separation of the fragments and a sizable lower fragment is not left, they advise the immediate removal of the whole patella. Twenty patients had total or partial excision of the patella; in nine the upper fragment was removed, in three the lower fragment, and in eight a total excision of the patella was done. Eleven of these patients returned at the authors' request for personal examination, the remainder are listed as unknown. There were seven excellent results and in four good improvement was obtained. A longitudinal incision was used in seven instances, a curved longitudinal incision in six and a transverse semicircular incision with the concavity downward in seven. The question of non-union or of fibrous union of the patella or of adhesions to the femur never arises. The operator may choose his incision provided exposure is adequate to investigate and repair the tears in the knee joint capsule. The length of hospitalization was substantially less than that for the series treated by older methods. The patella does not regenerate following excision.

Artificial Fever in Treatment of Gonorrheal Ophthalmia

As fever treatment of gonorrheal infections in various parts of the body is beneficial and as the lethal death time of *Neisseria gonorrhoeae* at 41.5 C. (106.7 F.) varies between six and twenty-four hours, W. T. Hasler, Jr., and Louis Speker, Durham, N. C. (Journal A. M. A., July 11, 1936), treated six cases of gonorrheal ophthalmia with radiant energy. Treatments for five hours at 41.5 C. or lower (never higher) may be given instead of the twelve hourly period, which requires two or three shifts of nurses. However, more treatments will be required. During the first two or three hours of fever the conjunctival discharge diminishes rapidly in amount and the edema becomes less, allowing the irrigating solution to reach all parts of the conjunctiva. Toward the end of the treatment the changes have progressed, so that the cornea, which perhaps could not be seen well before treatment, because of chemosis, now can be more clearly observed. Irrigations may be continued with ease for the next few days. Gonococci, which still may be present, seem to be less resistant to antiseptics. Though irrigations may not be necessary, it is wiser to carry them out at intervals of four hours. If the infection is not eradicated by the first treatment, the inflammatory process may recur in two or three days, when a second treatment should be given. Of the six patients having gonorrheal ophthalmia the organisms disappeared after one or two treatments in five. In the sixth the gonococci disappeared one week following the second treatment.

Report of Licenses Granted to Practice Medicine

NAME	Year of Birth	Place of Birth	School of Graduation	Year of Graduation	ADDRESS
Collins, Glenn Jesse	1913	Elmore City, Okla.	University of Okla.	1935	Oklahoma City, Okla.
Casey, Earle A.	1907	Meridan, Okla.	University of Okla.	1935	San Francisco, Calif.
McDonald, Glen Webster	1911	Headrick, Okla.	University of Okla.	1934	Duncan, Oklahoma
Wilkins, Afton Norvell	1907	Murray, Kansas	University of Okla.	1935	Cache, Oklahoma
Kramer, John Thomas, Jr.	1908	Tulsa, Okla.	University of Okla.	1935	Oklahoma City, Okla.
Shirley, Edward T.	—	Crystal City, Texas	University of Okla.	1934	Pauls Valley, Okla.

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EDITORIAL

THE OKLAHOMA CITY CLINICAL CONFERENCE

This excellent meeting, as you will notice on the front cover page of THE JOURNAL, is to be held October 26, 27, 28 and 29, at Hotel Biltmore in Oklahoma City, and this gives the medical profession of Oklahoma an opportunity to hear some of the very best international medical authorities on subjects that will be of general interest.

Not only will professional subjects be very liberally discussed but Dr. Charles Gordon Heyd, President of the American Medical Association, is to be present at this meeting and will undoubtedly discuss some phases of Medical Organization that will be of interest to every physician.

The medical profession of Oklahoma

City has gone to much expense and hard work to bring to our very door this most excellent program and the physicians of the State are missing a most wonderful opportunity if they do not participate in this conference. With the scientific discussions, the discussion of medical organization and the carefully planned social features a program has been built up that is well worth while.

CANNED FOODS

The tin can in which preserved products have for years been marketed has had to accept the responsibility for many illnesses and many people, not properly informed, have been "gun shy" of canned foods. Physicians are asked many questions by their patients about the danger of using the products and perhaps have given too little thought to this subject and are consequently unable to give intelligent advice.

The preparation of materials for canning consists, first, of thorough cleansing which is usually done by washing under high pressure sprays, then the stock is carefully sorted by removing any imperfect products. These procedures are sometimes done mechanically. In some instances the materials to be canned are "blanched" or scalded by immersion in hot water. This process serves not only to clean the product further but also to soften the tissues and expel air therefrom. Sometimes the food is pre-cooked and filled into cans; again it may be filled into cans and hot water or salt and sugar solutions added. All of these operations serve to pre-heat the food and exclude air from the cans.

The cans are hermetically sealed while the contents are still hot. The sealed cans are then heat processed to destroy spoilage micro-organisms; finally the cans are cooled in water or air which contracts the contents and produces a vacuum within the can.

One question commonly asked concerning canned food is whether or not the contents of the can should be removed to another container immediately after opening. This is entirely unnecessary and this idea has been as thoroughly discredited as the "ptomaine" theory of food poisoning.

After considering the foregoing description of the preparation and canning of food it would appear that the freshly opened can is the cleanest container in the average kitchen.

With certain foods, it is desirable from the standpoint of quality to remove the food from the can. Such foods, usually those of an acidic nature, may act slowly on the can after air is admitted and small amounts of tin and iron may be absorbed. Traces of these metals have been shown by a government laboratory to be entirely innocuous.

It may be interesting to know that the modern sanitary style can is manufactured from "tin plate." This is made by plating or coating thin steel sheets with pure tin. Foods packed in plain or unenameled cans are, therefore, exposed to iron and tin surfaces and it is common knowledge that canned foods may acquire small amounts of these metals from contact with their containers.

In general the acid foods tend to take up more of these metals, especially when air is admitted after the can is opened. However, the quantities of tin or iron present in canned foods, as a result of reaction with the container, are small; the analytical chemist reports these amounts in "parts per million."

We are often asked relative to chemical preservatives in commercially canned foods and we wish to say there are no preservatives used.

Spoilage of food is principally caused by the growth and multiplication in food of micro-organisms, such as yeast, molds, or certain types of bacteria.

All methods of food preservation have a common underlying principle; they all alter some factor or factors in the food environment so as to render conditions unfavorable for the growth or development of spoilage organisms in the food.

The methods used in the commercially canned foods has done away with botulism. The effectiveness of these measures used by the canning industry of the United States is evidenced by the fact that no case of botulism attributable to an American commercially canned food has occurred during the past ten years.

Such are the facts. The American can-

ning industry offers its products to the consuming public for what they are; namely, wholesome and nutritious foods.

COMMERCIALIZED BLOOD PRESSURE

"Read Your Own Blood Pressure, 10c," was the large sign in front of a device at Coney Island which has become the storm center of a legal battle. The State Department of Education has asked the Supreme Court to order those and other machines of the kind out of existence on the ground that their operation violates the State Medical Practice Act. Taking blood pressure is argued to be a diagnosis of a physical condition, and should not be done except by a physician. The maker of the machines has countered by filing an injunction to prevent interference with his business, and the matter will be fought out in the courts.

On August 1 an operator of one of the machines was arrested on charge of practicing medicine without a license, and will soon be brought to trial. Any comment here on his guilt or innocence of this offense before the verdict would be in contempt of court, and the next issue of this department might have to be written in the calaboose, so nothing had better be said, perhaps, on that point.

It would be easy to magnify the danger of this blood-pressure device out of all true proportion. Probably nobody with arterio-sclerosis is going to burst a blood-vessel when he sees the pointer climb to some high figure on the dial. At the same time we all know that such a casual side-walk reading is more likely to be wrong than right. The poor dupe who pays his dime may easily be so fidgety that he will show a higher pressure than he normally has. Every doctor knows the excitable type of patient who has to be calmed down and put at his ease before taking the reading, or it will be too high. A leading Boston internist is quoted as saying that he takes three rapid readings in succession in all cases and accepts the lowest systolic and diastolic as the fairest.

FIRING A CANNON AT A FLEA

The Coney Island device came up in conversation at the New York Academy of Medicine a few days ago and a well-known

physician said it reminded him of an experience related by Heywood Broun, the columnist. It seemed that Broun was having a physical examination, and noticed a slight lift of the doctor's eyebrow as he took his blood-pressure. "What's wrong, doctor?" "Oh, nothing." "Why did you lift your eyebrow?" "Well, your blood-pressure is just a little low, but not enough to bother about."

Nevertheless, it did worry him, and a few days later he decided to have another doctor go over him. Again, the physician's eyebrow arched a trifle. "What's wrong, doctor?" "Oh, nothing." "Why did you lift your eyebrow?" "Well, your blood-pressure is just a little high, but not enough to bother about." The worry had done it. The fact is, of course, that the arterial tension is so fickle an affair that a device like the one at Coney is worse than useless. To take a test after chuting the chutes, bumping the bumps, riding the merry-go-round, and filling up with hot-dogs and peanuts is like counting the pulse after a foot-race. But to get all steamed up over the imaginary perils of the machine is equally too feverish. If some folks are scared into consulting a doctor, they may get a real examination and advice that will do them good. Too drastic action may be like firing a cannon at a flea.—Reprint from New York State Journal of Medicine, September 1, 1936, Vol. 36, No. 17.

Editorial Notes—Personal and General

DR. J. H. HOWE, accompanied by Mrs. Howe, of Oklahoma City, attended the sessions of the three-day meeting of the Southwestern Urological Association in Omaha, Neb., September 16, 17 and 18.

DR. ALLEN R. RUSSELL, McAlester, attended the meeting of the Southwestern Urological Association at Omaha, Neb., September 16, 17 and 18.

DR. HERVEY A. FOERSTER, Oklahoma City, announces the opening of offices, 314 Medical Arts building, with practice limited to dermatology.

DR. COYNE H. CAMPBELL, Oklahoma City, is taking special work in psychiatry in Chicago.

DR. J. C. REYNOLDS, Frederick, is recovering from injuries sustained when he was knocked down by a car.

DR. A. S. PIPER, Enid, spent the latter part of

September in New York at the American Academy of Ophthalmology and Oto-Laryngology.

DR. and MRS. J. WILLIAM FINCH, Sentinel, are in St. Louis where Dr. Finch is enrolled in the Washington University Post Graduate School of Pediatrics for the months of October and November.

DR. WYLIE CHESNUT, Miami, was named Secretary of the Ottawa County Medical Society to succeed DR. CHARLES M. GRAY, who resigned to go to Washington, D. C., where he will continue his practice.

DR. E. O. JOHNSON has just completed a year's fellowship course in gynecology and obstetrics at Johns Hopkins Hospital, and has become associated with Dr. P. N. Charbonnet, 2-6 Medical Arts Building, Tulsa.

News of the County Medical Societies

At a regular session of the LeFlore County Medical Society, meeting September 10, Dr. S. D. Beville, Poteau, Okla., and Dr. Neeson Rolle, Poteau, Okla., were expelled from the Society because of their connection with hospital association that is soliciting patients.

Members of the Tulsa County Medical Society were hosts to a special legislative meeting October 12. The following program was given:

Introductory remarks.

Introduction of Mr. Jess Harper, Executive Secretary, Dr. L. S. Willour, Secretary, McAlester.

Our Legislative Program—Dr. McLain Rogers, Member Legislative Committee, Clinton.

Efforts and Accomplishments—Dr. H. K. Speed, Chairman Legislative Committee, Sayre.

General discussion.

The Kay County Medical Society met in Blackwell, Okla., September 21, 1936. Three speakers from Arkansas City, Kans., were in charge.

Dr. Lochlan Beatson, who gave a very interesting, instructive paper with his personal experience on total obliteration of the thyroid in angina pectoris, he being a victim of this disease and having undergone the operation.

Dr. Moran Fischer and Dr. Moran were the other speakers.

RESOLUTIONS

The following resolution was passed by the Okmulgee County Medical Society upon the death of Dr. W. S. Watson, 81-year-old retired pioneer physician:

WHEREAS, this committee, recording the deep regret that we and The Okmulgee County Medical Society feel at his passing, and,

WHEREAS, this society has lost a true friend and those among whom he labored for so many years, a valuable counselor, and,

WHEREAS, he will be remembered as a true and lofty-minded citizen, one true to his profession, loyal and just to his family, therefore,

BE IT RESOLVED, that we extend to the family

our deepest sympathy and condolence in their loss, and,

Be IT FURTHER RESOLVED, that a copy of this resolution be spread upon the minutes of this meeting, and that it be published in The Journal of the Oklahoma State Medical Association, and that a copy be sent to the family and to the press of this city.

M. D. Carnell.
W. C. Mitchener,
S. B. Leslie.

CHANGES IN 1936 ROSTER

NEW MEMBERS

Carter County:
Morris, D. Gordon Healdton

Garvin County:
Robberson, Jr., M. E. Wynnewood

RENEWALS

Jackson County:
Collier, E. K. Tipton

Lincoln County:
Baird, W. D. Stroud

Osage County:
Alexander, E. T. Barnsdall

CHANGE OF ADDRESS

Garfield County:
Mathews, G. F. Enid to Tahlequah

Okfuskee County:
Murdoch, L. H., Okeene, to Route 6, Box 264-A.,
Oklahoma City

Oklahoma County:
Emenhiser, Lee K., Oklahoma City, to Barnes Hos-
pital, St. Louis Mo.

Quinolor Lubricant

In Quinolor Lubricant, the Squibb Laboratories are offering a new antiseptic lubricating jelly whose field of service is especially broad. It may be used as a simple household application or for scientific employment in the operating room. It is bacteriostatic and antiseptic, does not become rancid, is non-irritating and is not injurious to the most delicate tissues. Upon the gloved finger for digital examination or upon catheters, sounds, nozzles, tubes or any similar instrument, it facilitates and renders painless their introduction. As an antiseptic, it may be employed as a protective dressing for superficial lesions.

Quinolor Lubricant yields a clear zone of five to six millimeters when subjected to the "cup test" against staphylococcus aureus. Its antiseptic power is due to the inclusion of 0.025 per cent of a new antiseptic substance, Quinolor, which is produced by the chlorination of hydroxy-quinoline. Whether applied to moist or dry surface, Quinolor Lubricant spreads readily and smoothly and adheres tenaciously. It is soluble in water, may be removed without the use of soap and does not stain clothing or linen.

Quinolor Lubricant—Squibb Antiseptic Lubricating Jelly—is supplied in 2½ and 4½ ounce collapsible tubes.

Academy of Physical Medicine Annual Meeting

The Academy of Physical Medicine will hold its annual meeting in Boston, Mass., at the Hotel Statler, October 20, 21 and 22, 1936. The program is educational in character and contains symposia and reports on the newer studies and clinical de-

velopments in physical medicine presented by recognized authorities in the various fields of medicine and basic sciences.

LEGISLATIVE FUND

County	Allotment	Amt. Paid
Adair	\$ 40.00	
Alfalfa	70.00	
Atoka-Coal	30.00	\$ 10.00
Beckham	140.00	130.00
Blaine	90.00	
Bryan	240.00	140.00
Caddo	240.00	
Canadian	230.00	
Carter	260.00	
Cherokee	30.00	
Choctaw	70.00	60.00
Cleveland	270.00	
Comanche	190.00	
Cotton	90.00	
Craig	150.00	80.00
Creek	330.00	185.00
Custer	230.00	210.00
Garfield	420.00	250.00
Garvin	150.00	150.00
Grady	230.00	160.00
Grant	40.00	
Greer	110.00	
Harmon	80.00	
Haskell	60.00	40.00
Hughes	170.00	
Jackson	160.00	120.00
Jefferson	110.00	
Johnston	10.00	
Kay	320.00	280.00
Kingfisher	90.00	
Kiowa	170.00	
Latimer	40.00	
LeFlore	160.00	100.00
Lincoln	150.00	30.00
Logan	200.00	100.00
Major	30.00	
Marshall	50.00	
Mayes	110.00	20.00
McClain	60.00	
McCurtain	70.00	
McIntosh	60.00	50.00
Murray	110.00	
Muskogee	520.00	10.00
Noble	40.00	
Nowata	50.00	
Okfuskee	150.00	
Oklahoma	2740.00	1060.00
Okmulgee	280.00	210.00
Osage	220.00	140.00
Ottawa	310.00	
Pawnee	100.00	90.00
Payne	250.00	140.00
Pittsburg	350.00	170.00
Pontotoc	300.00	290.00
Pottawatomie	330.00	150.00
Pushmataha	80.00	
Rogers	120.00	
Seminole	320.00	
Sequoyah	10.00	
Stephens	220.00	
Texas	50.00	
Tillman	100.00	
Tulsa	1980.00	
Wagoner	40.00	
Washington	250.00	230.00
Washita	120.00	
Woods	190.00	140.00
Woodward	260.00	140.00

NOTE—Corrections and additions to the above list will be appreciated.

OBITUARIES

DOCTOR SAMUEL ROBERT CUNNINGHAM

Samuel Robert Cunningham was born in Putnam County, Indiana, June 20, 1873. He came of a family who had been pioneers in the settlement of that state. His life on the farm, together with the heritage of a strong body, developed in him a penchant for athletics, and an outdoor life, which explains some of his many hobbies.

He took his collegiate work at Butler College, Indianapolis, where he received a degree of Bachelor of Science. He graduated from the Indiana Medical College in 1899, and practiced in Indianapolis from 1899 to 1908, when he came to Oklahoma City. He was first associated with the late Dr. A. K. West, who at that time was Dean of the Epworth Medical School, which later became the University of Oklahoma School of Medicine. His first duties in the the Medical School was the Chair of Gynecology (September, 1910). His interest in orthopedics caused him to shift to that specialty, so that he was given the Chair of Orthopedics in 1927, and retained that position until his death.

Dr. Cunningham belonged to the following medical societies: Oklahoma County Medical Society, State Medical Society, American Medical Association, College of Surgeons, American Orthopedic Association, Charter Member of the American Academy of Orthopedics, Orthopedic Clinical Society, and Certified by the National Committee to practice Orthopedic Surgery. Some of his recent publications were: "Fracture of the Ulna with Dislocation of the Head of the Radius," *Journal Bone and Joint Surgery*, Vol. XVI, April, 1934. "Treatment of Fracture by Skeletal Traction," *Surgery, Gynecology and Obstetrics*, February, 1931.

He played professional baseball as a means of earning money for his college work. He was a devotee of golf for many years, and held title of State Champion for awhile. His love of the horse caused him to later become a daily rider, and he owned some very creditable saddle stock.

His civic and social life can best be visualized by the fact that he was a member of the Board of Directors of the Y. M. C. A., Oklahoma City Golf and Country Club, Saddle and Polo Club, Men's Dinner Club, Chamber of Commerce, and the University Club. His interest in Boy Scouts brought the fruition of a Camp Cunningham, named for him.

He leaves a wife, who as Miss Della Hanson he married in August, 1927. He left two sons by his first marriage, Roger, thirty-one years of age, who is a teacher of science in the Oklahoma City high school, and Hugh, twenty-nine years of age, a graduate physician and resident in Bellevue Hospital, New York.

He had been failing in health for some months, but kept at his work until a short time before his death, which occurred September 7, 1936. He leaves a large circle of friends and admirers.

DOCTOR W. D. HAYNIE

Dr. W. D. Haynie was born near New Albany, Miss., on June 22, 1874, where he grew to young manhood. After completing the common, high school and college courses he entered on the study of medicine, attending several southern medical colleges, qualifying to practice medicine in the Indian Territory by examination just before statehood.

He first located at Powell, Marshall county, and after practicing there several years, moved to Kingston, Marshall county, where he enjoyed a large practice, and was active in the practice up until a week before his death which occurred at the Wilson N. Jones Hospital, Sherman, Texas, on September 21, 1936.

He had the happy gift of making friends, and was held in high esteem by all who knew him. He was a leading citizen of his community and was a leader in organized medicine. He served as Secretary of the Marshall County Medical Society, and at the time of his death he was president of the society.

Early in life he joined the Associate Reformed Presbyterian Church and lived a consistent Christian all his life. He was a thirty-second degree Mason, holding his membership at McAlester, and his Blue Lodge membership at Kingston.

His funeral was held at the Methodist Church at Kingston on September 22, where a large number of his friends paid their last sad respects to a life well spent, and his body was laid to rest in the Kingston cemetery by the side of his wife who preceded him in death two and a half years. Besides his seven children who mourn his loss, he leaves one sister and four brothers, one of whom is Dr. John A. Haynie of Durant, Okla., and one nephew who is a physician, Dr. Keiller Haynie, of Durant, Okla.

DOCTOR W. S. WATSON

Dr. W. S. Watson, 81-year-old retired pioneer physician, died at his home in Okmulgee, Oklahoma, August 9, 1936, following an illness of ten days caused by cerebral apoplexy.

Dr. Watson was born in Tulip, Arkansas. He graduated from the Missouri School of Medicine, now Washington University, in St. Louis, in 1880. Only one other graduate of that period now survives.

Doctor Watson was married to Miss Etta Palmer and they established their residence in Amity, Arkansas, where he practiced medicine for forty-one years. In 1921 the family moved to Okmulgee where he was engaged in active practice until four years ago.

Dr. Watson was made an honorary lifetime member of the Okmulgee County Medical Society, and in May last, was given the same honor by the Oklahoma State Medical Association.

RECENT DEATHS

(Insufficient data available for obituary)

Dodson, W. O., Willow, August 5, 1936.

Edwards, R. T., Oklahoma City, August 6, 1936.

Huckabay, C. R., Idabel, August 20, 1936.

Keller, G. F., Oklahoma City, August 12, 1936.

ABSTRACTS : REVIEWS : COMMENTS and CORRESPONDENCE

INTERNAL MEDICINE

Edited by C. E. Bradley, M.D., Medical Arts Building,
Tulsa; Hugh Jeter, M.D., 1200 North Walker,
Oklahoma City

By C. E. BRADLEY, M.D.

The Early Treatment of Poliomyelitis and the Importance of Physical Therapy. Arthur T. Legg, M.D., Boston. *Journal A. M. A.*, Volume 107, Number 9, August 29, 1936.

The author discusses the treatment of fifty-three cases of poliomyelitis pointing out the value of treatment over long periods of time in the prevention of deformities and the regaining of muscle power.

Undoubtedly the most important phase of the treatment of poliomyelitis is the complete rest and immobilization with the limbs in the neutral position as soon as the first or acute stage of the disease is over—that is, when the temperature has dropped to normal, and the muscles show definite paralysis or weakness. This complete rest must be insisted upon to prevent contracture and to aid in the relief of the sensitive stage.

A complete muscle examination should be made as soon as the sensitive stage is over, and plans for muscle training made accordingly.

It is preferable to begin with the muscle training under water, because the buoyancy of the water aids the patient and gives him new interest and hope because of his accomplishments. It is important that the patient be carefully watched so that over-exercise does not weaken the muscles. Too many physicians leave the follow-up care of these patients to their physiotherapists. The author feels that the physician should retain complete responsibility for the care of these patients even over long periods. He gives a complete muscle examination each month for the first four months, then every two months for the next six months, then every four months for the next six years, and finally every six months. If this procedure is carried out, there is little danger of developing one muscle at the expense of another.

In immobilizing the limbs, it is important to remember that the neutral position should not be held so long that the joints become stiff. If wire splints or bi-valved plasters are used, they can be easily removed; and after the acute sensitive stage has passed, the arms or legs may be removed once or twice a day and manually flexed (providing the patient is unable to flex them) within the limits of sensitiveness.

The author divided his cases into three groups; those receiving good care, medium care, and poor care. His studies show that all of the cases showed their greatest amount of improvement during the first year, and that even then the degree of improvement coincided with the class of treatment given them. Of course there is a small percentage of cases that will recover spontaneously, but the author feels that all of these cases will recover within the first six months. These studies were

made over a period of nine years: the patients receiving good treatment improved eighty-one per cent in the nine years, patients receiving medium treatment improved seventy-four per cent, and those receiving poor treatment improved but fifty-three per cent.

It is especially interesting and encouraging to note that even after nine years of careful and persistent treatment these weakened muscles showed definite improvement, and above all it is a challenge to any physician who comes in contact with a case of poliomyelitis to stress the importance of prompt and prolonged treatment.

Intravenous Treatment of Meningococcic Meningitis With Meningococcus Antitoxin. Archibald L. Hoyle, M.D., Chicago. *Journal A. M. A.*, Volume 107, Number 7, August 15 1936.

A survey of the literature and the official statistics of cities and states shows a surprisingly high death rate prevailing for meningococcus meningitis. The statistics which follow are typical. At the Cook County Hospital in Chicago, during a period of nineteen years prior to 1934, the fatality rate for meningococcus meningitis has varied from thirty-five per cent to ninety per cent, and has averaged over fifty per cent. All of these patients received serum intraspinally; occasionally other types of injections were made, but they were only resorted to as auxiliary measures.

Age seems to greatly influence the fatality rate, being comparatively low, or 12.9 per cent, in children under ten years of age, and increasing proportionately with age.

The question which is foremost in the mind of the author is: "Are we justified in calling a meningococcic meningitis an acute infectious disease of the nervous system? Is it not perhaps a systemic infection of which the meningitis is a complication?" This thought was presented by Herrick twenty years ago, when he suggested the term meningococcia for the entity, claiming that the disease travels through the body in the blood stream, and that the meninges are thus infected. This interpretation would, we feel, account for the poor and incongruous results of the present accepted treatment—intraspinal injection of the serum—and upon it we have based our present mode of treatment which is as follows:

Immediately on admission to the hospital a blood culture is taken. If the patient has petechiae, the blood culture is nearly always positive. Should there be little or no rigidity of the neck a lumbar puncture is not performed. Preparations are made for intravenous therapy, and later, after the blood culture has become negative, a spinal tap is done to confirm the clinical diagnosis.

Antimeningococcus serum or meningococcus antitoxin was given to alternate patients in order to compare therapeutic effects. This was done irrespective of age or severity of infection. Whether meningococcus serum or antitoxin is to be injected, it is given diluted in ten per cent dextrose in physiologic saline of at least twice the volume of

the therapeutic agent. From five to fifteen minims of epinephrine is added to the mixture. It is then administered by the gravity method at a flow of about sixty drops per minute at body temperature. Any vein in an extremity may be selected—the part should be immobilized on a splint.

When antitoxin is used, 50,000 units for a child to 100,000 units for an adult is usually given as an initial dose. If one of the standard antimeningococcus sera is selected, the dose is generally from 150 cc. for a child to 200 to 300 cc. for an adult. Either treatment may be repeated at twenty-four hour intervals if it seems indicated. Frequently only one large dose will be required; however, the author recently gave 100,000 units of antitoxin four consecutive days, to a woman who had been ill six days before she entered the hospital in coma. She made a complete recovery and was discharged from the hospital in twelve days.

Most of the patients developed urticaria in five to seven days, but no serious reactions have been encountered; none have been more severe when the agent was diluted as described, than those occurring when undiluted serum is injected intraspinally.

The patients treated during 1934, 1935, and 1936 have received no intraspinal treatment, and the fatality rate for all cases was only 11.8 per cent. The fatality rate for the forty-three patients who were twenty years old or less, was only 2.3 per cent. For the thirty-one antitoxin-treated patients, irrespective of age, the fatality rate was 6.4 per cent. The fatality rates for all serum treated patients was 14.2 per cent. This wide difference in apparent therapeutic efficiency between the antitoxin and serum groups is not usually so marked. The number off meningococcal patients treated exclusively by the intravenous route was ninety-six, and the fatality rate for the combined groups was 15.9 per cent.

The administration of an adequate dose of antitoxin or serum is followed by a marked decline in temperature, often with return to normal within twelve hours. If a satisfactory response is not produced within twenty-four hours, the dose is repeated. Frequently in very severe cases a second dose is administered in twelve hours. Evidence of intracranial pressure is an indication for another lumbar puncture. Often a pronounced reduction in the cell count, and an absence of meningococci, is noted. This is of interest because it has been thought for so long that destruction of the meningococcus depended upon its coming in direct contact with the serum.

Opisthotonos is common when the antimeningococcus serum is administered intraspinally. There is more irritation of the meninges due to the presence of a foreign substance; this is demonstrated by the fact that when this method of therapy is used in the septicemic state, the meningitis symptoms become more pronounced. The fact that frequently spinal taps done early in the course of the disease have been negative for meningococci and elevated cell counts, has led the author to consider the toxic aspects of the disease more carefully. Moreover there is always danger of secondary infection and permanent injury to the vertebral column when numerous spinal taps are done.

Suppurative processes are seldom encountered when the patient is treated by the intravenous method exclusively. Panophthalmitis is one of the most serious complications of epidemic meningitis, but it has not occurred in any patient receiving exclusively intravenous therapy. Endophthalmitis, iridocyclitis, and optic atrophy have occurred, but neither eye nor ear complications have developed in any antitoxin treated patient after this form of therapy has been instituted. The few eye and ear complications that developed in the serum-treated

patients were attributed to toxic rather than to suppurative influences.

Strabismus and facial paralysis, even complete hemiplegia, are not uncommon complications of meningitis, and have been noted in some of our cases on hospitalization. They all happened to be treated with antitoxin and made complete recovery. Hydrocephalus occurs much less frequently in cases treated intravenously, and so the persistent belief that lack of spinal taps produced the condition seems doomed.

So far the author has no discharged patients who were treated exclusively by the intravenous method, re-enter the hospital because of recurrences. Recurrences were not uncommon in the past in patients who were treated intraspinally.

By HUGH JETER, M.D., F.A.C.P., A.S.C.P.

Blood: A Review of Recent Literature. Raphael Isaacs, M.D., Cyrus C. Sturgis, M.D., Frank H. Bethel, M.D., and S. Milton Goldhamer, M.D., Ann Arbor, Mich.

HEMOPHILIA

There is considerable diversity of opinion regarding the nature of the blood elements concerned with the clotting mechanism in hemophilia. It was recently demonstrated that all the elements are normal but that the formation of thrombin is delayed. Some authors have expressed the belief that the disease is due to faulty development of the liver while others have stated that it is caused by an endocrine deficiency.

There is described a syndrome known as pseudo-hemophilia which is characterized by heredity, transmission by either sex, normal platelet count, positive reactions to the Rumpel-Leed and needle-prick tests, prolonged time and normal clotting time.

Histopathologic studies of bone marrow in hemophilia reveal an increase in number of megakaryocytes. The red cell forming and white cell forming tissues appear normal with the exception of the prominence of the reticulo-endothelial, no changes are evident in the spleen or lymph glands.

No known specific therapy exists. Some of the common agents employed are whole blood, citrated blood, human plasma, human and animal serum, defibrinated blood, hemostatic preparations, fibrinogen and cephalin in suspension, calcium chloride, sodium citrate, protein shock, liver and its derivatives, whole ovary and ovarian extracts and a special dietary regime.

Investigators do not agree that there is an estrogenic hormone in the urine of the hemophilic.

"BANTT'S DISEASE"

Pathological changes which are in keeping with this disease have been produced experimentally by obstruction of portal and splenic veins and appear to be secondary to liver pathology

The anemia present may be microcytic or macrocytic. Hemorrhage is the most important factor but liver pathology and a disturbance in the function of the reticulo-endothelial system are also thought to play a part.

Splenectomy is not the accepted treatment as previously. The results obtained by workers at the University of Michigan as well as by others, do not seem to justify the continuation of surgery because of the high mortality rate and equally good results following conservative measures.

GAUCHER'S DISEASE

Three members of a family, a sister, and two brothers, were studied by Kveim. The ages were

twenty-three, twenty-six and twenty-eight years. The symptomatology included hepatomegaly, splenomegaly, leukopenia, thrombopenia, an increase in the rate of sedimentation, a tendency to bleed, subperiosteal hemorrhages, petechiae on the lower extremities and brown discoloration of the exposed parts of the body. Gaucher cells were found in the bone marrow. In the sister there was a black discoloration of the instep and leg almost up to the knees, apparently associated with the hemorrhagic diathesis.

NIEMANN-PICK'S DISEASE AND SCHULLER-CHRISTIAN'S SYNDROME

Esser isolated diplococci from the blood of his patient.

Radding reported a case in which x-ray therapy was used and the patient was living and under observation for eleven years. Several authors reported cases, some with interesting symptoms

HODGKIN'S DISEASE: LYMPHBLASTOMA

The disease is shown to involve many different organs. It is pointed out that pulmonary lymphogranulomatosis may be confused with tuberculosis. Wile and Stiles observed a case for thirteen years, which appeared at first to be a typical case of mycosis fungoides, but finally developed into a typical Hodgkin's disease.

Schwarz stated that pregnancy and high altitudes are detrimental. He also outlined methods of irradiation.

Desjardins has summarized the present status of the treatment of leukemia as follows:

In acute leukemia, exposure to roentgen rays or radium is seldom followed by perceptible improvement, and experienced radiologists usually do not encourage such treatment. In the subacute form cautious treatment, and in the chronic form thorough treatment, yield more or less marked improvement for periods varying from months to several years. Usually the treatment must be repeated from time to time, depending on the numerical behavior of the leukocytes and on the tendency of the spleen or lymph nodes to enlarge. Effective treatment can be given with roentgen rays or radium. At the outset, and when extensive areas require irradiation, roentgen rays are preferable.

In myeloid leukemia the rays are directed first to the spleen, and then, if this is not sufficient to reduce the number of leukocytes approximately to the normal level, the mediastinum and long bones also may be irradiated. When the spleen is large, the surface of the abdomen corresponding to that organ may be divided into a number of fields, approximately ten cm. square, and each field should be exposed to a moderate dose of roentgen rays. If radium is used to irradiate the enlarged spleen, a large pack is required. The effect of treatment on the leukocytes should be followed closely by daily or frequent blood counts. When the number of leukocytes diminishes rapidly, the number of fields irradiated each day should be correspondingly reduced; otherwise, an excessive leukopenia may result. An abnormally small number of erythrocytes at the outset need not be regarded as a contraindication; under treatment the number of these cells tends to increase as the number of leukocytes diminishes. After a patient has been treated a number of times at intervals of months, the effectiveness of treatment tends to diminish; but this varies considerably from patient to patient. If the patient cooperates faithfully, the disease may often be kept under control for prolonged periods, sometimes for many years.

In lymphoid leukemia the treatment is directed first to the main groups of lymph nodes in the neck, axillae and groins, as well as to the medias-

tinal and retroperitoneal lymph nodes. If, by the time these several regions have been irradiated, the number of leukocytes has not diminished sufficiently, additional treatment to the shaft of the major long bones may have to be given.

INFECTIOUS MONONUCLEOSIS

No specific etiologic agent has been discovered.

Leukocytosis accompanied with mononucleosis (mononuclear cells which are difficult to classify), a characteristic febrile course with adenopathy are essential in the diagnosis. Recently, Paul and Bunnell have devised a heterophilic antibody test which appears to be practically specific (serum sickness to be excluded).

There is no specific treatment.

AGRANULOCYTIC ANGINA

Krache and Parker believe that aminopyrine alone or in combination, is responsible for the disease in a large number of cases.

Gordon is not in accord.

Jackson stated that aminopyrine has an important etiologic significance in some cases, but he expressed the opinion that conclusive evidence has not demonstrated that it is the sole or even the major cause of the disease.

Kastlin and also Jackson have made observations which indicate that there must be a variability of susceptibility in "sensitive" persons if aminopyrine plays an important etiologic role in this disease.

Despite various attempts, it cannot be said that it is possible to produce true agranulocytosis in animals. This is not surprising if it is agreed that the condition occurs only in certain persons who are susceptible.

Nonspecific therapy, stimulating doses of roentgen rays, liver extract, adenine sulfate, pentnucleotide, blood transfusions and leukocytic cream have been used as therapeutic agents in this disease.

Jackson urges that large doses of pentnucleotide be administered. He is decidedly against transfusions. He stated that the most effective therapy for the disease at present is as follows: (1) intelligent nursing care, (2) adequate fluids and food, (3) careful avoidance of sepsis, (4) administration of full doses of pentnucleotide, (5) the fearless use of such surgical measures as would be instituted in a person with a normal blood and (6) the use of codeine as a sedative.

COMMENT: This concludes an abstract of a review of hematology covering 310 different articles all of which have a bearing on recent advances in this field.

EYE, EAR, NOSE AND THROAT

Edited by Marvin D. Henley, M.D.
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Conjunctivitis Due to Fusospirochetal Infection.
John H. Dunnington, M.D., and Devorah Khorazo, M.D., New York. *Archives of Ophthalmology*, August, 1936.

Since it is not a favorable site for the development of such, fusospirochetal infections of the eye, reported, are comparatively rare. The first such case was recorded by Bertozzi in 1907, in a case of metastatic ophthalmitis. Wakisaka and Lohlein noted the presence of these organisms in cases of dacryocystitis. Gifford reproduced these organisms from an ulcer surrounding the canaliculus and also from a chalazion. Kompanejetz and Seecof recorded the presence of this bacilli in an orbital cellulitis

secondary to sinusitis. Scholtz in a case of gangrenous conjunctiva after an old injury with a retained foreign body, recorded the fusiform bacilli present.

Five previous cases of conjunctivitis resulting from a fusospirochetal infection have previously been reported. One case occurred in a girl, age fourteen, poorly developed, who lived in a neighborhood where there was an epidemic of "sore throat." Although negative cultures were obtained, it was thought at the time that this was probably Vincent's angina. She had a bilateral purulent conjunctivitis followed by ulcers of the cornea with subsequent dense leukomas and loss of vision. The other cases started from a stomatitis; one in a physician from saliva from a dental fistula and two cases apparently a primary infection, since no focus of origin was found.

Some of the forms of treatment mentioned are: Pregl's solution (a solution of the sodium salt of hydriodic acid and iodic acid with 0.04 per cent iodine); 1.5 per cent concentration of zinc sulfate; locally potassium arsenite and intravenous arsenic; and one per cent sodium perborate.

The case reported is that of a girl, age twenty. She had had a purulent discharge from one eye for a period of two weeks due to what she said was a "cold." She had been using a mild silver protein instillation which had no effect on the infection. The condition of the eye when first seen is described. Copper sulfate was used at four-day intervals for a period of three weeks without apparent effect. The treatment was then changed to one per cent silver nitrate every three days and a mild solution of zinc sulfate three times daily at home for the ensuing four weeks. During the course of this time the infection had remained in one eye but there was not any definite improvement noted. Dark field examination of the secretion revealed the presence of a few spirochetes. Stained films were made as well as cultures grown from the secretion obtained from the eye. Polymorphonuclear cells, gram-positive diplococci, gram negative bacilli, fusiform bacilli, occasional spirochetes, staphylococcus aureus and corynebacterium xerosis were reported. Noguchi's medium would not reproduce the spirochetes.

After the laboratory findings were reported the treatment was again changed, this time to weekly treatment with copper sulfate and in addition one per cent sodium perborate in an eyecup three times a day. The sodium perborate was used because of the beneficial results obtained from it in similar infections in the mouth, although there was not any record of it having been used previously in the eye. It was planned to start with a weak solution and gradually increase its strength. The improvement was so marked that it was not necessary to increase the strength. At the end of three weeks the eye was greatly improved. At the end of two months the eye was practically normal.

Epistaxis in Constitutional Syndrome of the Venules. Prof. C. A. Torrigiani, Florence. Abstracted by Forster and published in the *Journal of Laryngology and Otology*, February, 1935. Original article from *Acta Oto-Laryngologica*, XX, 1-2.

The various so-called haemorrhagic states are reviewed. The anaphylactic group of Schonlein, the constitutional thrombopathy of Willebrand, the constitutional thrombo-asthenia of Glanzmann, the condition called Werlhof's disease and, finally, the state of fibrinopenia of true haemophilia, but the speciality of rhinology is mainly interested in bleeding due to the fragility of small vessels and, further, the syndromes of capillary weakness are

more likely to interest the dermatologist and the internist.

The syndromes which interest rhinologists are those which have their pathological basis in the fragility of venules of the size and kind whose walls are made up of adventitia and endothelium and where the fundamental symptom is epistaxis.

The name of Legg of London is mentioned amongst those earlier observers who demonstrated cases of familial epistaxis, but Osler in 1901 first published case records of patients with serious epistaxis and who exhibited numerous telangiectases of the face, the mouth, the hands, and other parts of the body.

Epistaxis is the most common symptom. Examination of the blood condition has given no clue to the fundamental cause. A number of observers have published records of affected families and recently Goldstein has collected many from the literature.

In the author's clinic Lunedei has studied a number of cases of a different kind; these cases have shown epistaxis in infancy and since infancy, a tendency to bruising. Nasal varicosities are seen which do not contract under the influence of adrenalin, and there is a maternal hereditary factor. The cases are mostly females whereas in the Osler type of case both sexes are affected. Epistaxis is not so common and occurs in infancy and youth in this condition, but in the Osler type when the patients are of more certain age, the term ecchymitico-telangiectasia is suggested.

Another group of cases is said to be found in which these symptoms come on intermittently. This is a passing fragility of venules without a blood dyscrasia.

A family showing examples of hereditary bleeding defect of venular type is described, and the variations of the constitutional vein syndrome are set out in graphic form at the conclusion of the article.

Retrograde Sinus Thrombosis Complicating Primary Thrombosis of the Jugular Vein. F. E. Stone, M.D., and M. D. Berger, M.D., Brooklyn. *Archives of Otolaryngology*, August, 1936.

Literature shows only one similar case reported in which the diagnosis was made pre-operatively; the patient was operated, and lived.

The routes of infection described by the authors are: hematogenous, lymphatic, continuity, pterygoid (anterior-inferior), sphenoid (mesial), aural (posterior), tonsillar (postero-inferior), and the carotid venous plexus with direct spread into the lumen of the cavernous sinus.

CLINICAL PICTURE: The dictum of modern surgery is; Pus in the neck usually kills the patient by causing edema of the larynx or by burrowing and then bursting its bounds and flooding the larynx, trachea or mediastinum. The authors modify this with another grave complication of a deep infection of the neck as shown in their two cases of retrograde thrombosis of the sigmoid sinus secondary to primary thrombosis of the jugular vein and infection deep in the neck. Mosher is quoted as aptly calling the carotid sheath the Lincoln Highway of the neck. He says that by following this carotid sheath, one can in most cases readily reach and drain any purulent collection deep in the neck.

The diagnosis of the condition is next discussed. If there is a history of a sore throat and apparent recovery and at about this juncture there occurs the classic sign of sepsis, one should immediately examine the neck carefully to determine the source of the sepsis. A blood culture may be helpful. A tense swelling just behind and below the angle of

the mandible, probably accompanied by some glandular involvement, should concentrate the observer's attention here. This may be located anywhere along the course of the jugular vein. It is exquisitely tender and practically never fluctuating.

If the lower part of the neck is involved, spasm of the sternocleidomastoid muscle produces a torticollis. The presence of trismus indicates extension into the pharyngomaxillary space and if this is true then one may feel fairly certain that the internal jugular vein is involved. If there is headache or vertigo, vomiting, and impaired vision, then a neurological and eye ground examination should be done. An interesting discussion is here given in regard to the choking of the disc.

Abscess or tumor of the brain must be ruled out. The Crowe-Beck sign and the Tobey-Ayer test are mentioned in connection with this. A sixth nerve paralysis is not uncommon. If there is involvement of the posterior cranial fossa, the pressure paralyzes this nerve first.

Roentgenography in the otologic examination is of no diagnostic value. Late in the infection, the drum membrane may be slightly engorged, the tip of the mastoid tender. Hearing remains normal. Edema of the eyelids is discussed in an attempt to clear the confusion that may ensue after its appearance, ethmoiditis being the complicating factor.

Apropos of therapy the authors quote Thomas Carmody of Denver: "Continue the hot poultices to bring fluctuation in deep cervical infection and the abscess will probably open about three days after death." Radical surgery is advised, exposing the jugular vein from the lobule of the ear to the sternoclavicular articulation. In addition to the elimination of the focus of infection in as far as is possible from the jugular vein, a resection of all the large glands is also advised. Cosmetics cannot be given much consideration. Intravenous dextrose, insulin, and blood transfusions are recommended. A total of five cases are reported in detail.

Craniocervical Movement and Muscle Strength. **Dr. Samuel M. Weingrow, Bronx, N. Y. The Laryngoscope, August, 1936.**

This is a presentation of seven cases accompanied by illustrations and a general discussion. The author's conclusions are as follows:

1. Due to the frequent recourse to manipulations of the head and neck by the otolaryngologist and neurosurgeon, a proper understanding of the neuromuscular mechanism of the craniocervical apparatus seems to be indicated in both fields.
2. Head movements depend upon the action of muscle groups whose innervation is supplied by cranial and spinal nerves.
3. The muscle strength, as well as motor ability of these muscle groups, is brought into play when the head is flexed, extended, bent to either side, rotated or when flexion and extension are independently combined with lateral motion.
4. Flexion and extension of the head are executed by the action of the bilateral muscle groups carrying this function.
5. Lateral motion of the head is executed by the unilateral group of muscles on the side to which the head is bent. The anterolateral and posterolateral craniocervical movements are likewise unilateral in type in contrast to the anterior and posterior flexion and extension of the head in which the muscle groups of both the right and the left side act in unison.
6. A better understanding of the types of nuchal rigidity of meningitis and meningo-encephalitis, as well as that resulting from the tension of

increased intracranial pressure upon the meninges, is gained when the mechanism of the craniocervical apparatus is analyzed.

7. Cases of meningitis, brain abscess as well as vascular and leucic lesions of the cerebral hemispheres were presented, and the effects upon the craniocervical muscle strength and movement were analyzed.

8. A case of hemiplegia due to a cerebral thrombosis was presented and the abnormal craniocervical muscle strength on the same side were shown.

9. The craniocervical movements and muscle strength are particularly affected in lesions that involve the supranuclear motor representations of the lower cranial nerves.

10. When the head of the patient opposes the examiner's hand in the anterior aspect, the patient's chin rotates towards the hemiplegic side and contralateral to the lesion.

11. Head movements that occur in irritative and destructive lesions of the brain should be explained on the basis of the function of the craniocervical system.

12. A case with a Nothnagel syndrome was presented to show the effects of an extrapyramidal lesion upon the function of the craniocervical structures.

13. The disturbances in movement and muscle strength of the craniocervical apparatus were furthermore illustrated in multiple vascular lesions of the pons and medulla and compared with the reactions obtained in encephalitic involvements of these regions.

14. Different reactions were obtained in cervical spinal diseases depending upon the columns affected. Thus in the anterior horn pathology, associated with a case of syringomyelia, a different response was elicited from that noted in a case of multiple sclerosis.

15. In a case of multiple sclerosis a clockwise and counter-clockwise unilateral head clonus, the first one to be presented in the literature, was observed.

16. Lesions of the peripheral cervical nerves produce a much more circumferential and diffuse muscle weakness than that resulting from the localized intracranial unilateral lesions. They also differ distinctly from the effects upon selective nuchal muscle groups as encountered in encephalitis.

17. Cases of torticollis, myositis, or cervical osteoarthritis can be differentiated from the craniocervical disturbances of the preceding groups by palpation, local tenderness, etc.

SURGERY AND GYNECOLOGY

Abstracts, Reviews and Comments from
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Juvenile Tuberculosis of the Kidney, Diagnosis and Treatment. By Charles Pierre Mathe, M.D., F.A.C.S., San Francisco, California. Surgery, Gynecology and Obstetrics, September 1936.

In the first paragraph of this article the statement is made: "Our purpose is to emphasize the importance of suspecting tuberculosis of the kidney in children presenting cystitis, persistent pyuria, and relapsing pyelitis." It is believed that tuberculosis of the kidney in children is more frequent than is generally understood. It is believed that many cases of adult tuberculosis of the kidney had

earlier silent lesions in childhood which escaped attention.

In a historical note there is a reference to a successful surgical removal of the right kidney by Couper in 1880, the reason for removal being tumor-faction of the kidney. This was two years before the discovery of the tubercle bacillus by Koch, but apparently the reporter assumes that it was a tuberculosis of the kidney. The next nephrectomy in childhood was reported by Baker in 1882, the patient being seven years of age, and the diagnosis tuberculosis of the kidney. There is a reference to a report by Hamill in 1895 of fifty-four children with renal tuberculosis, most of the cases being discovered at autopsy.

Attention is directed to two generally accepted conclusions: (1) The conclusion of Rafin that renal tuberculosis is usually unilateral at its onset. (2) The conclusion based upon the teachings of Albarran and Israel that early nephrectomy would arrest and cure the greater percentage of unilateral renal tuberculosis.

Emphasis is laid upon the wisdom of making a technical examination in the case of any child who presents evidences of a chronic cystitis, persistent pyuria or relapsing pyelitis.

Six cases of unilateral tuberculosis of the kidney in children from eight years to eighteen years are reported, the group comprising 10.3 per cent of fifty-eight patients on whom nephrectomy was performed at St. Mary's Hospital, San Francisco, for tuberculosis. Four are living and well eight years, six years, eleven months, and three months after operation. Two died six months and five years, respectively, following operation because of generalised dissemination.

In a review of 4,698 cases of unilateral renal tuberculosis it was found that twelve per cent were from one year to twenty years of age, and that 0.42 per cent were in children from one to five years. "The autopsy statistics show that the incidence is much higher (twenty-five to thirty per cent).

The following is the last paragraph of the author's summary:

"Although clinical quiescence and autonephrectomy have been over-enthusiastically hailed as spontaneous healing of renal tuberculosis, nephrectomy is the treatment of choice in the unilateral type in children as well as in adults and, if this operation is performed sufficiently early, it is followed by a great percentage of cure."

COMMENTS: In the investigation of urinary tract pathology, a non-bacterial acid pyuria should attract particular attention, and in such a case a search for acid fast bacilli ought to be made. If acid fast bacilli are found there ought to be a cystoscopic examination with catheterization of the ureters and the examination of the urine from each one, and at this same time there should be a ureteropyelogram of each side. If, after such investigation, it is clear that the pathology involves one kidney, only, a nephrectomy ought to be done.

LeRoy Long.

The Acute Gall Bladder. By Frederic Taylor, M.D., Indianapolis, Indiana. Surgery, Gynecology and Obstetrics, September, 1936.

In this article there is an attempt, based upon the study of one hundred and twenty-nine cases, to clarify the symptomatology, to classify the pathology, and to determine whether an early operation should be done in the average "acute gall bladder."

It is indicated that classical symptoms and signs are not always present, the statement being made

that, "a goodly number of patients with very acute suppurative and even gangrenous lesions may present few or even none of the classical signs or symptoms."

The author states that, "the clinical diagnosis of acute cholecystitis, therefore, must rest upon an evaluation of the cardinal signs and symptoms that are present."

In a table accompanying the article, it is indicated that upper right abdominal pain, and upper right abdominal tenderness were present in practically one hundred per cent. Abdominal muscle rigidity, involuntary, was present in from seventy-one per cent to eighty-three per cent, and nausea or vomiting in from seventy-three per cent to 87.5 per cent. Referred pain to the back, shoulder and epigastrium was present in only from fifty to 52.2 per cent.

There is an attempt to divide the pathology into three types as follows: (1) Acute oedematous gall bladder. (2) Acute suppurative gall bladder. (3) Acute gangrenous gall bladder; but it is indicated that at first the symptoms and signs may be very much the same in all three types. In this situation, the reporter believes that a white blood count may be of great importance in making a differentiation of the types. In the table mentioned, the acute oedematous type showed an average W. B. C. of 12,500, the acute suppurative 15,200 and the acute gangrenous 20,000.

Three cases of acute oedematous gall bladder were operated upon within forty-eight hours without mortality. Eleven cases of acute suppurative gall bladder were operated upon within forty-eight hours without mortality. Five cases of acute gangrenous gall bladder were operated upon within forty-eight hours with a mortality of twenty per cent.

Five cases of acute oedematous gall bladder were operated upon between two and five days after the onset without mortality. Nine cases of acute suppurative gall bladder were operated upon between two and five days from the onset without mortality. Six cases of acute gangrenous gall bladder were operated upon between two and five days after the onset with a mortality of 16.7 per cent.

Nineteen cases of acute oedematous gall bladder were operated five days or more after the acute onset, with a mortality of 10.5 per cent. Twenty-eight cases of acute suppurative gall bladder were operated upon five days or more after acute onset, with a mortality of twenty-five per cent. Sixteen cases of acute gangrenous gall bladder were operated upon five days or more after acute onset, with a mortality of 37.5 per cent.

The conclusion reached is that the delay of operation past the second day and up to the fifth day of the acute disease does not cause increased risk except for the gangrenous gall bladder group. When the interval between onset and operation is five days or longer there is a sudden increased mortality in all groups.

The final conclusion is that the average acute gall bladder should be operated upon within the first few days after the onset—certainly under five days from the onset. The author says: "The operative mortality and that of Zininger (to whom he refers in the article) was not excessive even up to and including the fourth day after the acute onset. After this period, however, the mortality skyrocketed to approximately twenty-five per cent."

COMMENTS: The conclusion in this article corresponds exactly with our conception of the proper treatment of the acute gall bladder.

LeRoy Long.

The Use of Contruin in the Treatment of Benign Prostatic Hypertrophy. Surgical Clinics of North America. William E. Lower. August, 1936.

The prostate gland, although probably not part of the endocrine system, is maintained by various hormones. It is directly affected by testosterone and indirectly influenced by the gonadotropic hormone of the anterior lobe of the pituitary gland. In animals, prostatic hypertrophy can be produced by the injection of testicular hormone or by the injection of pituitary hormone. Many men, after they have reached the age of fifty years, appear to pass through changes corresponding to the climacteric; after this age, involuntary changes are likely to appear in the gonads and, probably as a result of this, the pituitary gland is frequently hyperactive. It seemed possible to Dr. Lower and his associates, some years ago, that these endocrine changes might be involved in the production of benign prostatic hypertrophy. Since then they have carried out extensive animal experimentation and this has clearly indicated that this view is probably correct and that at least in many cases of prostatic hypertrophy there is failure of the testes to produce a hormone other than testosterone which they have tentatively called contruin. These findings made them think of the possibility of using replacement endocrine therapy in the treatment of this condition.

A group of ninety patients have received this treatment. All had definite signs of obstruction such as hesitancy, slowing of the urinary stream, nocturia and frequency. They have felt that the type of case in which the medication was most applicable was that in which the prostate gland is of moderate consistency and movable as determined by rectal palpation. Some patients had complete retention of urine, whereas others had varying amounts of residual urine and nocturnal frequency. All patients were carefully studied from the point of view of kidney function and endocrine activity.

In most instances, partial relief of symptoms was manifested within a week or ten days after treatment was instituted. Maximum improvement usually occurred from four to six weeks from time treatment was instituted. No other treatment was used.

Improvement occurred in fifty-two, or 57.7 per cent, of the patients treated. The average age of the patient was sixty-eight.

The author is unable to explain why 42.2 per cent of the patients treated did not respond.

It has been known that approximately twenty per cent of the cases diagnosed clinically as benign prostatic hypertrophy have been proved at operation or autopsy to be malignant. A fibrous growth would not be suitable for this type of treatment. Diverticulum of the bladder would not respond. In the unimproved patients the known causes for the failure to obtain satisfactory results have been: previous punch operation and cystotomy, sclerotic type of middle lobe, very atonic and distended bladder, and associated diabetes.

The author is unable to explain the exact method by which symptoms are relieved. In many cases there has been no demonstrable decrease in the size of the gland. He believes that the change in symptoms is due to the medication that has been used but he retains an open mind as to the possibility that this group may represent the percentage of patients that would improve under ordinary conditions without medication. He appreciates the fact that a much larger number of clinical cases is necessary before final conclusion can be drawn.

LeRoy D. Long.

PLASTIC SURGERY

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The Role of Plastic Surgery in Burns Due to Roentgen Rays and Radium. By Sir Harold D. Gillies, C.B.R., F.R.C.S., and A. H. McIndoe, M.Sc., M.S. Minn., F.R.C.S., of London, England. *Annals of Surgery*, April, 1935 Vol. 101 No. 4.

The widespread use of radium and roentgen rays as therapeutic agents and their well-recognized potency for evil as well as for good has not unnaturally resulted in a considerable number of cases of radiodermatitis and radionecrosis. In comparison with the enormous number of treatments by radiation given daily in all parts of the world the actual number of cases is small. Yet they constitute a definite group of patients and a formidable one because of the pain and distress associated with the condition, its intractability to conservative treatment and its medico-legal importance.

Many of the cases are a legacy of work at a time when protective measures were poor and when soft rays were in general use. Others occur at the present time due to over-treatment, to inadequate protection of the patient or to deliberate heavy dosage for malignant disease. This aspect is important for it must not be forgotten that in sustaining overdosage effects, many patients have been cured of conditions far worse, or at least far more lethal.

The well-recognized latent period between the exposure and the appearance of the dermatitis also explains why it is that certain radiumologists declare that radiodermatitis is today practically extinct. He is frequently unaware of having produced a burn because it appeared years after the rays had been applied and after the patient had disappeared. In one instance the patient and radiumologist met nineteen years after the original treatment when the former was being shown at a medical congress as an example of plastic treatment of radiodermatitis. The radiumologist concerned had never known that his patient had sustained a serious and disabling burn.

More than one hundred cases have been seen in the last fifteen years and of these about one-half have submitted to operation. The subject is one that deserves closer attention than it has received in the past for an inquiry into the histories of these patients shows that the majority have spent years and often large sums of money in seeking relief by various conservative treatments and have only too often been finally told that nothing could be done about it. This lack of interest is reflected in medical literature where comparatively little has appeared in the last ten years. The medical profession should appreciate that the condition of chronic radiodermatitis is essentially a surgical one and inasmuch as a graft of some kind is almost always required, it should fall within the field of plastic surgery.

At a recent Radiological Conference in London a symposium was held on this subject to which my colleague, Mr. A. H. McIndoe, and I contributed. The clinical aspect was dealt with by Professor N. S. Finzi. We wish to present to you a further report on our experience in this condition and where necessary have drawn freely on the contributions of others at that conference.

ETIOLOGY

The effects described are purely and solely the result of roentgen rays or gamma rays upon the cells of the radiated tissue, but it is important to point out that radiation from other sources may

intensify this effect. Thus, ultraviolet light given before or after quite normal doses of roentgen rays may cause typical roentgen ray damage of considerable degree. Infra-red rays and strong sunlight may have the same effect.

The practical point emerging from this is that ultraviolet light or infra-red rays or indeed sunbathing should not be advised before or after any operation on these patients. Finzi emphasizes the danger of treating roentgen ray burns, keratosis or epitheliomata with full doses of radium: for while a temporary good result may be obtained, the cumulative ray damage is consequently of very severe degree and disastrous results are produced.

PATHOLOGY

The destructive effects of roentgen rays and gamma rays are attributable to two processes:

(a) Vascular obliterative changes in the arteries, veins, capillaries and lymphatics resulting in the interference with nutrition of the skin. Wolbach showed that the deep skin and the subcutaneous tissues received the brunt of the injury and that an obliterative endarteritis results, by whose steady progress the latent period is explained.

(b) Loss of function of the cells in the radiated area, according to the particular susceptibility of the cells and the intensity of the radiation: Regenerative capacity is reduced to its lowest point or disappears altogether. This influence is most marked on specialized cells and least on the fibroblast. The anemic necrosis produced by these processes is peculiar in that no definite line of demarcation forms as in ordinary anemic gangrene and there seems to be sufficient vascularity in the surrounding areas to keep the devitalized tissue from dying outright. Where definite ulceration has occurred, there is inadequate reaction on the part of the surrounding tissues to cast off the slough and it often remains as a yellow fibrinous membrane covering the exquisitely painful and sensitive ulcers. Although these ulcers may, if treated with extreme care, heal for a time, they more frequently break down, especially under the influence of secondary infection.

THE ACUTE LESION; After an excessive single dose which produces acute necrosis, the lesion consists of a central slough where the more intense rays have produced massive cell death, surrounded by an extensive zone of inflamed skin where the less powerful rays have produced circulatory and functional changes without actually killing the cells en masse. During this period when gangrene is marked and secondary infection is a prominent feature, the inflammatory reaction is so widespread that no pathologic or surgical line of demarcation between healthy and devitalized tissue can be defined. Indeed, none exists and at varying periods fresh sloughing may occur.

THE CHRONIC LESION: When the chronic lesion follows an acute necrosis the passage of months or years allows a slow contraction and absorption to take place. The ulcer shows very little evidence of repair, and its indolent painful base, devoid of all granulations, remains covered by a yellow crust from beneath which a serous discharge slowly oozes. As the full force of radiation is usually felt in the ulcerated area, fixation of the base to deeper structures such as muscle and bone is not uncommon and in not a few instances the latter may lie exposed and occasionally sequesters. Muscles and tendons appear dull white and completely fibrosed, though preserving their shape and form. When the chronic lesion is due to repeated small doses, the sequence of events is characterized by an insidious change in the quality and function of the skin and by a slow depression in its vitality. Some or all of the peculiar features

of telangiectasis, pigmentation, thickening and scarring of the corium, atrophy of the skin with disappearance of the sweat glands and sebaceous glands and the hair follicles, cracks and fissures, keratoses and malignant growths, make their appearance. When the balance between regeneration, tissue vitality and resistance to infection is upset, intractable ulceration makes its appearance. Not all the cases progress to ulceration though it might fairly be said that except in the very slight cases one cannot foretell those which will not eventually do so. The ray damage is cumulative, the obliterative process progressive and the latent period may vary from three or four months to twenty years.

PARTICULAR FEATURES

(a) Telangiectasis: These appear from one to two years after the initial ray damage, although if radiation is intense, they may start within four months. In the milder cases there is a tendency for them to disappear after four or five years. They may involve only a few vessels and small patches or they may become confluent and cover a large area with a continuous sheet of dark red vessels. The skin itself after the appearance of telangiectasis is never normal, though the change in its texture may be difficult to detect. According to Finzi they appear to be much more common after exposure of full doses every three or four weeks.

(b) Pigmentation: This is a constant accompaniment in almost every case and varies in amount according to the patient's skin. As the skin changes become more pronounced and atrophy more severe, it tends to become patchy in distribution.

(c) Atrophy of the Skin: The skin acquires a curious, smooth, wrinkled, papery character, indicating that the sweat sebaceous glands and hair follicles are completely destroyed. Study of the condition of the skin at this stage impresses one with the danger of attempting epilation by roentgen rays.

(d) Thickening of the Skin: With the slow establishment of the well-developed chronic form of dermatitis the whole thickness of the skin becomes involved so that it feels hard and leathery and assumes a mottled appearance due to a patchy pigmentation; cracks tend to appear in this thickened dry skin and may eventually form small linear ulcers.

(e) Keratoses: Wart-like excrescences commonly seen on the hand may follow both acute and chronic radiodermatitis. In the former they rarely tend to become epitheliomatous. In the latter there is a distinct tendency for epithelioma to develop.

It is important to emphasize these points, first to make clear the restricted field for conservative treatment and secondly to indicate the necessity for adequate excision of all the devitalized tissues at a suitable time in order to prepare a healthy foundation for grafting.

INDICATIONS FOR OPERATION

Not all roentgen ray burns demand immediate surgical treatment. Many of the milder cases heal, become quiescent and remain symptomless, leaving nothing but a patch of telangiectasis or mildly thickened skin. Again, acute massive necrosis should be for a time conservatively treated until the extent of the gangrene is determined and secondary infection has subsided. In my experience, about one-half of the cases presenting themselves for treatment are considered operable for the following reasons:

1. Pain, Itching, Ulceration: As a rule, with chronic ulceration the patient complains of exquisite pain which produces a condition of mind and body miserable in the extreme. In the telangiectatic

and rind-like areas an intolerable itching may drive a patient to despair. The relief of pain and irritation and the mental improvement which usually follow immediately the area is excised are most striking.

2. Deformity from Contraction: As a rule, this is very much less marked than with burns by fire, owing to the complete absence of keloid and the smaller amount of fibrous tissue formed. This is most frequently met with in patients who have undergone extensive treatment for diseases, such as lupus, which by themselves produce contraction. It is rather a feature of the condition treated than of the treatment. In the neck a certain amount of retraction of the chin and eversion of the lower lip may take place. Contraction deformities also occur in the neighborhood of the eyes and nose.

3. Cosmetic Appearance: The unpleasant and disfiguring appearance of the skin, especially on exposed parts, in the milder degrees of burn unaccompanied by ulceration can frequently be greatly improved by grafting. A knowledge of the ultimate cosmetic appearance of grafts of various types is essential in settling this question.

4. Epitheliomatous Change: Only in long-standing ulcerative radiodermatitis is cancer prone to supervene, but the possibility of its presence can never be excluded by superficial inspection. Microscopic examination of the excised areas should, therefore, never be omitted.

CONCLUSIONS: Very satisfactory results are obtained by excision of the affected areas in old burns from radium and x-ray and the immediate application of skin grafts. Grafts about the face naturally do not in every respect resemble the natural skin, hence the patient should be told in advance the truth of the situation.

The relief of pain, itching and burning by operation is really miraculous.

As stated, operations cannot be undertaken in the presence of infections or necrosis. The correction of contractures is much easier and much more satisfactory than a great many cases that have been burned by other agents.

ORTHOPAEDIC SURGERY

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Knochencyste Bei Enchondrom Des Femur. Resektions-Plastik. (Bone Cyst in Enchondroma of the Femur. Plastic Resection.) E. Looser. *Deutsche Ztschr. f. Chir.*, CCXLIV, 321, 1935.

The first explanation of the occurrence of bone cysts was given by Virchow, who found cartilaginous tissue in the neighborhood of a cyst in the humerus. Later, however, Virchow's conception was entirely abandoned. Looser has observed a case which proves that Virchow's idea is correct, at least in a small number of cases.

The patient, a male, now nineteen years old, had had a left-sided limp of many years' duration, with weakness of the left leg. The family history was negative. At the age of eleven, a roentgenogram had been taken which showed an irregular bony structure in the proximal end of the femoral diaphysis. Tuberculosis was suspected. Heliotherapy was instituted for a few weeks. One year later, the patient suffered a fracture of the femur while skiing. A roentgenogram showed a pathological fracture through a bone cyst. This fracture healed within ten weeks without shortening. One year later, an incision was made in the cyst wall, and

the pathological report was *ostitis fibrosa cystica* (some islands of cartilage were found in the section). Three years later, the patient was admitted again with pain in the thigh, following forceful strain of the hip region. The roentgenogram showed the bone cyst still present. With the electric saw, a slice of bone, fourteen and one-tenth centimeters long, was removed. A multilocular cystic lesion was encountered, which was surrounded in part by bony tissue and in part by cartilaginous tissue. Half a year later, a fracture occurred through the cystic area. At operation, the upper half of the femur was resected and a tibial bone graft (twenty-three centimeters long, two centimeters wide, and one centimeter thick) was implanted. Solid union had occurred eight months following the operation. One inch of shortening is present, but the patient has good use of the extremity.

Weitere Untersuchungen Über Luxatio Patellae (Further Studies of Dislocation of the Patella). O. Kapel, *Acta Chirurg. Scandinavica*, LXXVII, 296, 1935.

Follow-up examinations were made on thirty-three patients with forty-two knees upon which operations had been performed. In four unilateral cases the dislocations were chronic. After a variety of operations three of these were cured. One of these cases, that of a congenital dislocation, recurred at once after a Hubscher-Krogus operation. The writer advises against operation in the chronic case if the symptoms are not distressing.

Of the twenty-nine patients upon whom thirty-eight operations for recurrent dislocation of the patella had been performed, four were operated on by a variety of methods with one failure and one fair result. Thirty-four operations were performed as follows: twelve by the Krogus technique; twelve by a combination of the methods of Krogus and Goldthwait; and ten by capsulorrhaphy combined with the technique of Goldthwait.

The cases are reported in detail with the late results. In the ten cases in which the Goldthwait technique was used alone, there were six cures and four failures. The other twenty-four cases, operated upon by the Krogus or combined methods, included one immediate failure and one poor result without actual redislocation. The other results were good and these two methods are highly recommended.

In a group of fifty-five traumatic dislocations collected from histories in the Copenhagen hospitals, fifty per cent of the cases were followed by habitual recurrences and twenty-five per cent by other difficulties; only twenty-five per cent of the patients were without complaint. A complete tear of capsule and synovia was found in three cases operated upon soon after traumatic dislocation. The writer advises primary suture to avoid recurrences. The mechanism of causation is discussed.

The Influence of the Thyroid Gland on the Nature of Bone Callus. I. A. Shtshervina. *Soviet Surg.*, X, 29, 1935.

A series of experiments on rats were undertaken with the purpose of establishing the influence of the thyroid-gland secretion on the physical properties of callus. The resistance to tension, strain and compression was investigated. The following were the conclusions reached:

The removal of the thyroid gland retards regeneration of bone. Newly formed bone is less resistant. Transplantation of the thyroid gland shortens the time of regeneration and makes the regenerated bone more resistant, approaching the

strength of bone in control animals. The transplantation of the thyroid gland with a simultaneous transplantation of cartilage under the skin produces a callus equal in strength to, and even surpassing, callus in control animals. These results require further clinical investigations.

Lip Reading and Intelligence Quotient of Hard of Hearing Child

Aphrodite J. Hofsommer, Webster Groves, Mo., (Journal A. M. A., August 29, 1936), says that recent surveys in the public school system of the United States revealed that three million of the fifty million school children, or six per cent, have imperfect hearing. This paper is a preliminary presentation of the scholastic and personality changes attendant on the irremediably hard of hearing child. Such a child often develops an inferiority complex or becomes an introvert with its usual characteristics, or an aggressive bully, bidding for the center of attraction by lying, stealing and so on. If the hard of hearing child is not early recognized as such and helped, he falls behind in the class room. The author states that in the public schools of Webster Groves, in St. Louis County, the following program has been in effect for the past four years: During the first two months of the school year every child from the third grade through high school is tested with the 4-A phonographic audiometer. With this instrument it is possible to test as many as forty children at one time. Those below the third grade who are believed to be hard of hearing, because of slow progress or personality changes, are tested individually. These youngsters use the head phone in the usual manner but speak the numbers heard instead of writing them. Thus varying degrees of deafness are detected from the very start of school life. Those consistently showing a hearing loss then receive a special examination of nose, throat and ears by the school medical inspector to eliminate impacted cerumen. A further check on hearing is made with the 2-A audiometer. Parents are notified of the hearing loss and advised to consult an otologist for correction when possible. Meanwhile lip reading instructions are begun by teachers trained at the Central Institute for the Deaf of St. Louis. After from one to three years forty-seven per cent

showed an increase in their intelligence quotient, 41.1 per cent showed no change, and 11.7 per cent showed a drop in their intelligence quotient. In 76.4 per cent definite class room improvement was made, and all showed marked betterment in behaviorism. In contrast, another group of hard of hearing children who refused lip reading showed no increase in their intelligence quotient during the same period, but seventy-five per cent showed a drop; only 18.7 per cent made class room improvement, and all were character problems.

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NOTE—Corrections and additions to the above list will be cheerfully accepted.

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Cough: Its Relation to Pharyngeal and Nasal Infection *

L. C. McHENRY, M.D.
OKLAHOMA CITY

"The cough reflex is the watchdog of the lungs." This statement has often been used as a text by Dr. Chevalier Jackson in stressing the importance of preserving the cough reflex. In certain conditions where ventilation of the lungs is impaired cough is essential in clearing out secretions. In such conditions the use of opiates is contra-indicated as they tend to obtund the cough reflex. The figure of speech may be carried still further. Cough is important in its regular duty of clearing the air passages of secretions. It is important in that it is often the warning symptom which calls our attention to serious matters. Persistent cough is the most consistent and often the only early symptom of cancer of the lung. It is the only symptom that causes diagnosis to be made sufficiently early to offer hope in treatment. It is cough that calls our attention to the intrusion of foreign bodies into the air passages. It is apt to be the symptom that brings the patient with pulmonary tuberculosis to the doctor. Truly cough is the watchdog of the lungs.

Secondary affections of the lower air passages caused by infections of the nose and throat are well known. The patient with chronic sinusitis with purulent discharge which drains into the trachea and causes chronic bronchitis or even bronchiectasis has been well advertised in medical literature. There has also been much

discussion of certain cases with bronchitis and asthma and co-existent chronic sinus infection. Some authors advocate very extensive sinus surgery in enthusiastic endeavors to eradicate all infection from the sinuses. Others believe that only such measures as will produce ventilation and drainage of the sinuses are justified. With these conditions we are all familiar. These patients have a productive cough of greater or less severity. To return to our allegory of the watchdog, we may say that in these instances he is performing his regular duty in an orderly way.

There are many cases, however, in which cough is a prominent symptom but in which there is no direct affection of the trachea, bronchi or lungs. Cough in such instances may be classed usually as reflex cough rather than as necessary cough. Here we may say that the watchdog seems to be suffering from insomnia and is barking, not at intruders in the basement, but at a truck on a nearby highway or perhaps at oil workers over in the next block. Nevertheless he keeps the patient awake at night and causes him to seek assistance from the doctor. This type of cough is frequently caused by stimulation of the sensory nerves of the nose, throat and ear. The sympathetic connections of these areas and their ganglia with the vagus and phrenic nerves, which are directly concerned with cough, have been well worked out.

We may perhaps best discuss several

*Read before the Section on Eye, Ear, Nose and Throat, Annual Meeting Oklahoma State Medical Association, Enid, April 7, 1936.

types of reflex cough due to conditions of the nose, throat and ear by briefly describing cases illustrating them.

Case No. 1: Miss J., a saleslady of thirty-five, was referred by an internist and an endocrinologist for examination of the throat and larynx because of a cough which had been persistent and annoying over a period of about six months. She had had repeated physical examinations, x-rays of the chest and x-rays of the sinuses without any cause for the cough being found. Various remedies had been given with only temporary relief. Examination disclosed a normal throat, larynx and nasopharynx and no evidence of infection of the sinuses. However there was a small mass of hyperplastic tissue upon the anterior tip of each middle turbinate which touched the septum at least part of the time. Touching of these masses and the contiguous septum with a cotton tipped applicator caused coughing which the patient described as similar to that which had been bothering her. The removal of these masses with a snare gave relief from the cough and at least six months later there had been no recurrence.

This type of pathology, in our experience, produces sneezing much more often than cough. There is very little difference, physiologically speaking, between sneezing and coughing. Sneezing is practically always spasmodic and involuntary. Coughing may be either voluntary or involuntary and it may be as spasmodic as a sneeze. The stimulation is often very similar and the mechanism as described by the physiologists is very similar. There is a deep inspiration, closure of the glottis, raising of intrapulmonary pressure by the accessory respiratory muscles and then sudden expulsive expiration. The action of the laryngeal and palatal muscles determines whether the result is a cough or a sneeze. In either event our friend the watchdog is at work again, though he may have been needlessly alarmed.

Case No. 2: Miss L., a stenographer of thirty who complained of a mild sore throat of four weeks duration with a persistent cough which was always worse on lying down and which interfered markedly with sleeping. She had used various and sundry well advertised antiseptics, gargles and lozenges with no relief or but

slight transient relief. Upon examination the larynx, pharynx and palate showed no more than the congestion which would have been caused by the previous sleepless night of coughing. The nasopharynx and nose showed no evidence of inflammation or discharge. The lingual tonsil was sufficiently enlarged so that it just touched the upper margin of the epiglottis when viewed with the tongue drawn forward. Treatment of the lingual tonsil resulted in relief from the cough in a short time.

Chronic lingual tonsillitis is a frequent cause of irritant throat symptoms. Cough is nearly always among these if the tonsil is sufficiently large to touch the epiglottis, the faucial tonsils or the lateral pharyngeal folds. Such a cough has exacerbations when the tonsil becomes congested or swollen. Merely a congestion of the underlying venous plexus may be enough to cause contact at times. It is commonly worse on lying down and better on sitting up. Usually relief of symptoms may be obtained by repeated applications of silver nitrate of moderate strength. Occasionally there is such marked enlargement that removal of the lingual tonsil is indicated. Operation in this area should be undertaken only with a great deal of caution as hemorrhage is very annoying and the scar resulting from extensive re-section may be as annoying as the original condition.

Case No. 3: Mrs. B., age twenty-seven, wife of a medical student. Four weeks previous to her visit to the office she had contracted influenza with laryngitis, pharyngitis and rhinitis. She had had fever for three or four days and had remained in bed during that period. During the second week all symptoms had cleared except a persistent cough which was worse and slightly productive in the mornings but bothered her all through the day and occasionally at night. Examination revealed a subacute granular pharyngitis, a moderate amount of scarring from a previous tonsillectomy and a mild general nasal congestion. There was ample nasal ventilation and no discharge in the middle or superior meati before or after shrinking of the turbinates. In the nasopharynx there was a small central mass of reddened lymphoid tissue which was covered by a thin layer of tenacious mucous which

seemed to be coming from an opening in the center of the mass. In this instance symptoms were relieved by daily removal of the mucopus and application of silver nitrate to the pocket together with the use of mild silver protein by dropper at home.

Inflammation of the nasopharynx is very common. Many of the cases of common cold have their inception in this area. Some authors go so far as to state that all colds start in the nasopharynx. The chronic inflammatory and infectious conditions of this region sometimes tax our diagnostic and therapeutic ability. In some instances it forms the only obvious objective clue to an ethmoidal or sphenoidal infection. In these, cough, especially morning cough, is apt to be a prominent symptom. Treatment of the nasopharynx will be of no avail until the sinus infection is eradicated. At times we find masses of lymphoid tissue, adenoids if you please, in the nasopharynx of the adult which are the seat of definite chronic infection. These may act as foci. Occasionally we may find a definite pocket which is full of pus and debris and drains through a small opening. This condition is known as Thornwald's disease or nasopharyngeal bursitis. Such lesions produce cough by reflex through the pharyngeal plexus or by drainage of secretions into the larynx. When there are definite deep folds or pockets it will probably be necessary to remove the infected lymphoid tissue in order to eradicate the infection. In other cases the application of various medicaments to the area affected may be sufficient to bring relief.

Another condition of the nasopharynx which sometimes causes annoying cough is that where there is extensive scarring from too enthusiastic removal of adenoids. Here secretions collect and dry with the formation of crusts. These are difficult for the patient to remove and cause him to cough and hawk until he annoys those around him as well as himself. Treatment is very difficult. Stimulating oily preparations usually give best results.

We have all seen or at least read about individuals who have been troubled by a slight unproductive tickling cough for varying periods of time and who have finally gotten relief when someone removed a mass of hardened cerumen from the external auditory canal. Certainly we have

all seen individuals who cough upon slight contact of speculum or applicator with the skin of the auditory meatus.

There is still another method by which infections of the nose and throat may produce cough. We have mentioned the effect of secretions from the nose and nasopharynx draining into the trachea and causing cough by their mechanical presence, and have mentioned some of the conditions which produce cough by reflex from the nose and throat. The pediatricians in our community have been troubled by cases which have had an upper respiratory infection and then have had a cough which persisted for many weeks after all evidence of infection in both upper and lower respiratory tracts had disappeared. X-ray in some of these cases has revealed enlargement of the tracheobronchial lymph nodes. Cough has usually been relieved by a few mild x-ray treatments. Such conditions may be readily understood when we remember the work of the late Dr. Mullin and others which established that the lymphatic drainage from the sinuses is into the tracheobronchial lymph glands. Enlargement of these glands apparently persists and causes cough, after the etiologic infections have subsided.

To return to the story of the watchdog. It has been very useful in the study and relief of many cases which present cough as a prominent symptom. Cough not only gives the alarm when the lower air passages are invaded but does his best in aiding to remove the intruders. He also calls our attention to conditions not directly affecting the pulmonary structures but which nevertheless need correction. It is true that sometimes his enthusiasm is too great and he has to be quieted. Patients come to us for relief from cough. This relief may be obtained at least temporarily by the use of opiates, that is, by beating the dog. It is better obtained by investigating and removing the cause of his excitement. This may be very simple or it may necessitate study and treatment over a long period of time. Undertaking such study and treatment is both our privilege and our duty. Our only reward may be more peaceful slumber for the patient.

* * *

DISCUSSION

Dr. A. E. Hale, Alva: We might elabo-

rate further on the "watchdog" allegory by considering whether it is a wolf hound, bulldog or a rat terrier. Every owner of a watchdog naturally rates him high as a watchdog. Thus, the type of cough is of assistance in differential diagnosis of just what is arousing the "watchdog of the lungs."

In the acute laryngeal inflammations, with a husky, hoarse cough, we would be inclined to point the finger of suspicion to a primary laryngeal infection rather than to a reflex cough from sinus infection or intranasal hypersensitiveness. Other types of acute primary laryngitis, laryngismus stridulus, (croup in children), membranous croup, and chronic laryngeal inflammation have types of cough that are characteristic and are an aid in differential diagnosis.

In many instances the physician interprets the diagnostic import of a cough with the same error in judgment that is made by the laity. That is, he overlooks the fact that the patient has an acute sinus infection with the attendant spread of the infection to the epipharynx and pharyngeal wall, and prescribes cough sedatives, opiates, gargles, and sprays, thus spraying the chemicals from the fire extinguisher on the fire alarm instead of the fire.

I think it is the experience of all of us that it is often difficult to sell the idea to our patients that their cough, which is so troublesome to them, can be caused by some condition remote in location from the lower structures of the throat. Perhaps it is well sometimes to allow them to continue the use of cough mixtures, local applications, and gargles, in conjunction with our treatment directed to the true focus of infection, thus allowing the rhinolaryngologist a loop hole or alibi in the case of failure and the continuance of the cough. Occasionally we have the reverse situation to contend with in patients that are "sinus minded." I recall the case of one of my patients who several years ago had an annoying cough, which was cleared up nicely by doing some nasal surgery and treatment directed to infected sinuses. Recently, she returned with a cough due to a decompensated heart and insisted that the sinus treatments before cured her cough and she believed her

sinuses were to blame for her present trouble.

Cough, like headache, is a common symptom associated with many diseases. Dr. McHenry in the scope of his paper, of course, has not mentioned a number of conditions of which cough may be a symptom, but from the viewpoint of the rhinolaryngologist he has given and discussed a practical classification of conditions producing cough. The elongated uvula and deviated septum might be added, though his general remarks on the subject of nasal deformities and throat irritations indirectly covers these.

I am glad the doctor mentioned these cases of cough caused by enlargement of the tracheobronchial lymph nodes. I have recently had two such cases, and have had the same good results from x-ray treatment. I think it is well we bear in mind this class of cases, we are apt to be confronted with this condition from time to time.

Clinical Effectiveness of Metrazol

The surgeon or anesthetist who is confronted with the problem of combatting shock or a depressive condition due to the anesthetic or analgesic used, naturally desires to avail himself of measures which are certain in their effect and which are convenient to use.

Various stimulants are usually injected with excellent results in some cases and indifferent results in others. Recent literature has called attention to the clinical effectiveness of Metrazol (Council Accepted) in overcoming such states in a large percentage of cases.

Metrazol tends to restore normal respiratory and circulatory activity through a direct action on the medullary centers controlling these processes. A depressed blood pressure rises toward a normal level and the circulation increases in rate and depth promptly following the subcutaneous or intravenous injection of Metrazol. In urgent cases, the injections may be repeated within a few minutes, although the effect from one injection usually lasts from one-half hour to an hour and a half. Inject one to three ampules (1 cc. each), repeated as often as necessary to sustain the patient.

Literature and reprints on the use of Metrazol will be sent upon request by the Bilhuber-Knoll Corporation, 154 Ogden Avenue, Jersey City, New Jersey.

Conservative Treatment for Habitual Dislocations of Shoulder

Arthur G. Davis, Erie, Pa. (Journal A. M. A., Sept. 26, 1936), states that (1) the treatment outlined has eliminated the necessity of operative measures in seventy-five per cent of a consecutive series of typical recurrent dislocations; (2) the patient is only somewhat disabled during a short period of treatment, and (3) the evidence submitted suggests that this short period of treatment yields results of a permanent kind and therefore offers an alternative to operative approach.

Acute Otitis Media in Children*

H. C. CHILDS, M.D.
TULSA

Middle ear infections among infants and children is second only to tonsillitis and indeed they are usually associated.

The incidence of its occurrence is greater among males than females. Children who have been well fed, clothed and housed are much less susceptible to upper-respiratory, accessory sinus diseases, and otitis media. The most frequent cause of this infection is either a common cold, tonsillitis, influenza, scarlet fever, pneumonia or whooping cough. During the course of any of the above infections the attending physician should watch carefully for otitis media as a complication.

A correct diagnosis, especially among infants, is not usually made until spontaneous perforation and suppuration has taken place. Treatment at this time is of little value and more especially so in the hands of the laity or general practitioner. In order that correct diagnosis of otitis media be made early in the course of the disease it is necessary to have the co-operative efforts of the otologist and pediatrician. Without this cooperation many children are treated for various and sundry digestive disorders. Unfortunately in infants, the patient is unable to direct the physician to the site of pain. Older children are more fortunate in that they are able to make their complaints known, thus giving the physician the correct clue.

Too often children who complain of ear-ache are treated by the grandmother with sweet oil, or other eardrops, giving a false sense of security, until serious complications arise.

The first symptom of otitis media usually noted by the mother or nurse is some evidence of pain, characterized by crying, restlessness or pulling at the ear. The patient frequently refuses food and there is some elevation of temperature. Vomiting sometimes occurs. An examination of the

ear with a well lighted otoscope will then show a drooping posterior wall, usually pointed, red and inflamed. This indicates increased pressure behind the tympanum.

TREATMENT

If a case is seen before the drum membrane ruptures a myringotomy is usually indicated, certainly if the posterior wall is drooping. There will be pus and frequently gas will escape through the incision. A firm cotton pledget should be placed into the canal and left there for at least one hour in order to absorb the pus and blood which otherwise might fill the canal and prevent free drainage. A loose cotton wick may be used subsequently, changed as often as is thoroughly saturated which may be from one-half to one hour or longer. Irrigation and other local intra-aural medication is contra-indicated at this time.

A general anesthetic should be employed, there being no satisfactory local anesthetic to my knowledge. It is cruel to hold little children by force and open the ear drum. I believe gas to be the ideal anesthetic, but it is not practical in general practice. I use chloroform in all cases but hesitate to recommend it to others, since but few of the younger men are trained in its use.

There are a few cases and circumstances under which the physician does not feel justified in giving an anesthetic of any kind or doing a myringotomy. The best treatment and one which may be effective under such conditions is the application of a strong astringent, either epinephrin or ephedrine instilled into the nose for five or ten minutes then apply strong negative pressure which many times will drain the middle ear through the eustachian tube. This procedure should be applied twice daily as long as necessary. In addition to the above measures a mixture of fifteen drops of phenol to an ounce of warm glycerin should be instilled into the external auditory canal and held there by a pledget

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of cotton, repeated every four hours. Glycerin is a hygroscopic and phenol is an analgesic. Moist heat constantly applied to the external ear will give much relief. A safe and effective systemic analgesic is aspirin. It relieves pain and reduces fever. A child of two years will take two grains every two or three hours as needed. If the drum has ruptured before it is seen by the physician such measures as will promote free drainage should be employed. A cotton wick inserted into the external auditory canal as described by Platt of Indianapolis is efficacious. It should be changed as often as saturated which in some cases is every one-half to one hour. Here again continuous moist heat is valuable. If drainage continues over eight weeks the condition is considered sub-acute or chronic. There are either granulations on the margin of the opening and may be in the middle ear or there are some mastoid cells infected.

A three to five per cent solution of zinc sulphate is the drug of choice in this complication. It is my practice to use an ordinary medicine dropper forcing the solution back and forth several times, instructing the patient to inhale deeply through the

nose and exhale through the mouth. This procedure has a tendency to hold the eustachian tube open allowing the medicine to pass out through the mouth. Alcohol, saturated with boric acid is effective but too painful for practical use among children. A five per cent solution of tannic acid may be used if there is any objection to the zinc, which is also painful.

Treatment should be applied at least once daily by the physician.

The above measures are usually satisfactory but in some cases I have found it necessary to alternate with a two to four per cent silver nitrate solution. In some instances one may over treat these cases as evidenced by lack of improvement. In which case suspend all medication and use only the cotton wick.

If after recovery from the otitis media there is a large perforation left in the drum, the patient will complain of a discharge from the auditory canal subsequently during an attack of acute upper-respiratory infection; this is due to mucous being forced through the eustachian tube from coughing. The condition improves as the patient grows older.

Treatment of Pneumonia*

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The past has seen a continued usage of the classification of pneumonias into broncho-pneumonia and lobar pneumonia, purely an anatomical classification, without regard for the etiological diagnosis. The treatment then was necessarily limited to that of general hygienic measures and to symptomatic relief. The more recent observations on both diagnosis and therapy of pneumonia have been that when the etiological as well as the anatomical factors are considered, the therapy has been much more productive of good results. To illustrate, when Dochez and

Gillespie showed that the pneumococcus which is the organism most commonly found producing pneumonia is not a single organism but a family of organisms, the individuals of which have certain peculiar biological characteristics, and when Cole and his associates of the Rockefeller Institute showed that at least one of the individual types of the organism had specificity of immunity, real progress in the therapy of pneumonia was made.

Extensive study of the pneumococcus has resulted in the discovery that there are three definite types of the organism and that others of the same family, differing morphologically and biologically, were

*Read before the Section on General Medicine, Annual Meeting, Oklahoma State Medical Association, Enid, April, 1936.

common offenders in producing pneumonia. These latter were grouped into one type but of late this group has been definitely separated into twenty-nine different types. Continued work on specific immunity with this organism has shown that type one particularly, and type two to a somewhat less extent have specific antigenic properties. With these, specific anti-pneumococcic sera have been produced but for type three and group IV which includes twenty-nine types, there have been no definitely proven immunological products produced. Reports on types seven and twelve are encouraging however. Since about thirty per cent of all pneumonia cases are the result of types one and two, the effects on therapy are obvious.

The treatment of pneumonia, whether broncho-pneumonia or lobar pneumonia, is in a marked degree not unlike the treatment of any other severe infection. To be sure, certain therapy must be carried out because of the location of the pathological process, but little can be done in this respect. The fact that the body resistance can of itself build a defensive mechanism against pneumococcic invasion to the extent that in a limited time the infection is entirely overcome, should direct our efforts toward assisting nature increase her resistance against the invasion, and whenever possible, relieve the load by supplying antibodies in the form of immune sera. The therapy then of pneumonia resolves itself into:

1. Specific therapy in a limited number of cases; about thirty per cent.
2. The maintenance of the general condition of the patient.
3. The treatment of special conditions arising during the course of the disease.

Specific Serum: The typing of the organism producing pneumonia is a relatively simple matter and requires only a very little time. If type one or two is found, Felton's serum, which is serum of the horse that has been immunized against these organisms, is given in doses of 10,000 units every two to four hours until the crisis, which is usually rather dramatic, occurs. This is as a rule within twenty-four hours. Cecil and Plaummer say that "there are no more striking clinical effects in the

whole domain of serum therapy than that which frequently follows the early administration of concentrated serum in type one pneumonia." The temperature drops rapidly, very much as in a natural crisis, and all symptoms of toxemia frequently disappear within twenty-four hours. Reports on the effectiveness of serum therapy have varied. Cecil for example in 1931 reported a mortality in serum treated cases of 14.3 per cent as compared with that of sixty-five per cent in the control group. The serum in all these was given within forty-eight hours after onset. This is a necessity, that the serum be given early. Others have reported less favorably, yet without a doubt favorably, both as to length of illness and as to fatalities.

General Care: The maintenance of the general condition of the patient is of paramount importance in all cases, but more especially in the sixty per cent to seventy per cent of cases not due to types one and two. Of the general measures, rest heads the list.

Absolute rest, both mental and physical, is next to a specific in pneumonia therapy. To obtain this there are definite requirements which should be met. First, the patient must be in a quiet room where only those in attendance are admitted. To admit everyone who cares to visit the patient is to invite disaster. Whether the patient is in the home or in the hospital, the environment must be conducive to rest. A comfortable bed should be had and extreme caution taken to keep it smooth and comfortable. The prone position in bed is preferred to the reclining because of the fact that the patient in the reclining position will make some effort to assist himself, and too, the reclining position allows the patient to slide down in bed and continually be in an uncomfortable position. A trained nurse should be on the case when possible. Her duties are (1) to keep the patient comfortable, (2) supply him with his needs with as little expenditure of energy as possible on the part of the patient, for there is no other illness wherein a little energy may make as much difference in the outcome as in pneumonia, and (3) to assist the doctor in watching for and relieving complications which within a short while may become embarrassing.

Once the diagnosis of pneumonia is

made, extensive examinations in front and back are definitely injurious and should not be made. What difference in treatment will it make whether more signs of consolidation are present today than were there yesterday? Examinations usurp the patient's energy. These should be limited to the anterior chest wall when the patient is on his back.

Diet: The fact that pneumonia is a self-limited disease of comparatively short duration precludes any serious nutritional disturbance if during the illness the patient does not take the estimated caloric requirements. As a rule though the patients do best who take and assimilate without difficulty a high caloric diet. Easily digested foods naturally are better tolerated. The best diet is one mainly of liquids, such as milk, broth, and fruit juices heavily loaded with lactose or even cane sugar. It is far better to give sugars in the fluid intake than to resort to intravenous administration of glucose so long as the intestinal tract tolerates these. However, in the event that food intake is not tolerated, or is contra-indicated, glucose intravenously is at times lifesaving. Fluid diet has the advantage of increasing the liquid intake which should amount to 3000 to 5000 cc. within twenty-four hours.

Bowels: There should be in most instances a bowel movement daily. This may be had by enemata providing this method does not exhaust the patient. I have found it a very good practice to use mild laxatives in sufficient quantities to get results. The abdomen should be examined two or three times daily for distention or poor elimination. I would rather have the information had from examining the abdomen than that obtained from extensive chest examination.

Bathing: Pneumonia patients profit by a daily tepid sponge. This type of bath refreshes and cleanses. It is quieting, and many times after a bath, the patient will sleep for a few hours. Cold baths are too stimulating and should not be given, even for the reduction of temperatures. They increase the respiratory rate, are too shocking to the nervous system, and are energy consuming, consequently have no place in the armamentarium. Likewise, the temperature of the air in the room should

be temperate, sixty to seventy degrees, and not the extreme cold.

TREATMENT OF SPECIAL CONDITIONS

Pain: Pain in the side is a very common subjective symptom and when present may become very harassing. It increases the rate and shallowness of respiration, thereby being conducive to cyanosis, and, being due to a pleural rub, is influenced by movement of the chest on the affected side. Hence if unilateral, it may be completely relieved in some instances by pneumothorax, which procedure is not practical in the home, nor in the hospital in inexperienced hands and without adequate equipment. Marked relief may be had however by tight strapping of the affected side with adhesive especially if the pathology is low in the chest. At times complete relief is immediate. The old time mustard plaster, due to the counter irritation, is of value in many instances. If the more simple remedies fail, morphine is indicated and should be given. Regardless of the therapy, the pain must be alleviated for if it is not, it leads to restlessness and needless use of strength and energy which may be needed later. A few hours of pain may mean a difference in the outcome.

Tympanities: Distention of the abdomen is a common, and in many instances distressing and serious complication, due to its effect on respiration, pressure upward on the diaphragm, and the increased toxicity from absorption. It should be treated by prevention, but in the event it is present it may be relieved at times by enemas. A very good enema is that of milk and molasses, which in the absence of an ileus, will usually give the desired results. If these fail, other measures should be used immediately. Treatment of a falling blood pressure will aid, and sometimes give complete relief. Colon tube is effective in some, and at times resort will have to be made to turpentine stupes, or pituitary products. Regardless of the method of relief, the condition should not be allowed to remain for even a few hours. This, like the pain, for a few hours may make a difference.

Cyanosis: It is now definitely known that in most cases of pneumonia a varying degree of anoxemia is present and that in all except the very anemic patient, it is

manifest by cyanosis. Since anoxemia may and does cause distressing symptoms in otherwise well individuals, it is only the more important to relieve an already incapacitated individual of it. Cyanosis in itself may seem harmless, but may I quote Barach: "It might be said that the disturbance of the gastro-intestinal system is manifested by nausea, vomiting, and diarrhea; the respiratory system by increased rate and depth of respiration or by periodic respiration, and later by rapid, shallow respiration; the circulatory system by a constant and progressive increase in pulse rate and in the end by a fall in the diastolic pressure and cardiac failure; the central nervous system by headache, visual disturbances, irrational states and delirium, and finally, coma and death." Any or all of these symptoms may be due to anoxemia. Since anoxemia is due to either one or more of three factors, namely; toxemia, with definite changes in metabolism secondarily involving the medullary centers; (2) a change in the oxygen combining power of the blood, or (3) to the local condition of the lung tissue whereby it has become somewhat impervious to the oxygen of the inspired air, and since relief can be had in most instances by the proper administration of oxygen, cyanosis should be relieved early by the use of oxygen. The method of administration differs little. The oxygen tent, if available, is probably most efficient, however nasal administration is very effective. Adequate supply of oxygen relieves pain by limiting excursions. The fact that many cyanotic cases of pneumonia get well causes procrastination of the use of oxygen until a late hour when damage is already done. By giving oxygen early, even before cyanosis, organic damage is prevented, restlessness is eliminated, and the patient given the odds for recovery. If cyanosis cannot be relieved by oxygen, the prognosis is very bad.

An intensive study on the "Immediate Cause of Death in Pneumonia" at Bellevue Hospital has shown that "patients with pneumonia most frequently die from circulatory failure. In this term must be included both essential cardiac failure and peripheral vasomotor paralysis."

The factors influencing the circulatory system are:

1. Partial obstruction in the lungs. This is shown by the increased blood pressure in the pulmonary circulation and one only needs to watch the pulmonary second sound which is accentuated in proportion to the rise in pressure, providing the right heart is compensating, in order to determine the heart condition.
2. Toxemia. Toxemia gives a definite myocardial degeneration, a typical myocardosis. This was shown definitely in over fifty per cent of the cases coming to autopsy at the Bellevue Hospital.
3. Anoxemia. That anoxemia influences the circulatory system is conclusively shown by the improvement in pulse and blood pressure by the administration of oxygen in the presence of cyanosis, whether or not there is a failing condition in the heart of peripheral vasculature. If the anoxemia and the toxemia are controlled as outlined above, the instances will be rare in which the local pathology is sufficient to give right heart failure, hence the problem of circulation if and when it arises, will be peripheral vasomotor collapse. To determine this, blood pressure should be taken frequently. In the event that the systolic pressure fails markedly, or the diastolic falls below sixty, vasomotor stimulants should be given. Pitressin has been the drug of choice for this. Strychnine is of inestimable value.

It is easy to see that there are a number of conditions that may arise in the course of pneumonia which if left for even a few hours may make a difference as to outcome. Due to this fact it is necessary for the physician to see his patient frequently, for there are few nurses who will be able to observe the clinical changes accurately enough but that some of these will slip by and the result will be a greater per cent of fatalities. At times it will be necessary for the physician to remain with the patient twenty-four to forty-eight hours.

Summarizing then:

1. Pneumonia should be treated more from an etiological standpoint.

2. Specific serum should be given in types one and two.
3. Rest should be the watch-word for all pneumonias.
4. Relief, immediate, from all arising symptoms is necessary.
5. Frequent visitation of the patient by his physician is indispensable.

The Recent Outbreak of Lobar Pneumonia in Tulsa and Vicinity*

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As a preface to my remarks on the recent outbreak of pneumococcus pneumonia in Tulsa and vicinity as well as in other parts of Oklahoma, I wish to define lobar pneumonia, from the viewpoint of bacterial etiology, as a massive inflammation of one or more lobes of the lung produced solely by one of the various type of pneumococci. The pneumococcus also causes broncho pneumonia, a type found almost exclusively in children before the age of three years and rarely in adults. Atypical pneumonias simulating lobar pneumonia and caused by various organisms such as the streptococcus, Friedlander bacillus, staphylococcus, and influenza bacilli, present, on the other hand certain clinical, radiological, and anatomical features which distinguish them from typical lobar pneumonia.

With the above in mind it may be stated as a fact that lobar pneumonia has up to

a comparatively recent date, been a relatively infrequent disease in Oklahoma. In the experience of various clinicians here and elsewhere with whom I have discussed this problem, the consensus of opinion was that atypical lobar and broncho pneumonia have been by far the predominating types. The incidence of lobar pneumonia has been so low that the question was raised as to whether true lobar pneumonia even existed at all in Oklahoma.

Dr. Heffron, director of the Department of Public Health at Boston, in a recent personal communication stated that the same situation existed in the state of Washington and throughout the middle west. The incidence of lobar pneumonia was also greatly increased in the New York and Boston districts during the past winter.

Even though lobar pneumonia occurs both in cold regions and in the tropics it is of considerable interest to note that just since December, 1935, has the disease be-

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A SURVEY OF 612 CASES OF PNEUMONIA SHOWING THE INCIDENCE IN TULSA AREA

MORNINGSIDE HOSPITAL				ST. JOHN'S HOSPITAL			COMBINED	
Year	Lobar	Broncho	Total	Lobar	Broncho	Total	Total	Per Cent Mortality
1930* to 1934	No Survey	No Survey		3	142	145	145	22.7
1934	No Survey	No Survey		20	51	71	71	36.2
1935	53	108	161	21	60	81	242	25.2
First Four Months 1936	22	48	70	40	44	84	154	26.6

The above includes 140 children under the age of three years with mortality of 23.5%.

*Shepard and Ruprecht.

come prevalent here. As a matter of speculation as to the reason for this increased incidence various factors are to be considered. It is obvious that the incidence of an infectious disease depends upon the virulence of the infecting organism, its presence in sufficient numbers or dosage, and to the resistance, namely, natural or acquired immunity of the individual. The lack of acquired immunity as a result of non-contact with the particular types of pneumococci prevalent in other parts of the country may be of some import inasmuch as the pneumococcus has heretofore been relatively rare here. It has been shown that dust harbors pneumococci. During the past two years dust storms have occurred here rather often. In addition dust produces respiratory irritation which reduces local resistance and may be an important factor in causing the recent outbreak of pneumonia. Greenberg¹ has claimed that temperature is the most important of the meteorological factors in the etiology of pneumonia. Coincident with this statement is the fact that the past winter made a record of the most sustained low temperatures in the history of the weather bureau here.

In view of the fact that lobar pneumonia has recently become prevalent and that it will undoubtedly flourish here for succeeding winters, it may not be amiss to discuss briefly its important early clinical features, diagnosis, and specific treatment. Lobar pneumonia may begin in one of several ways. The onset may be acute; thus

a person apparently in robust health may be suddenly stricken with symptoms of the disease, especially if the body surface becomes chilled. This type, which is of common occurrence in colder sections of the country such as in New England, has not been as common here. The onset may follow an indefinite period of coryza or respiratory disturbance and the symptoms suddenly become aggravated with definite symptoms of the disease. In this type which has been the most frequent locally, the time of onset can be definitely determined. The disease may come on gradually during the course of a respiratory infection or other infectious disease when pre-existing respiratory symptoms become more pronounced.

Cole² in an analysis of seven hundred and seventy cases of lobar pneumonia at the Rockefeller Institute listed the common early symptoms as follows: (1) Pain in the chest occurred in seventy-five per cent of the cases. This may be of a severe lancinating type if the pleura is involved early or otherwise of a dull character. (2) A frank chill or chilly sensation occurred in sixty-two per cent of the cases. Cole also mentions cough and respiratory distress as common early symptoms.

Symptoms such as headache, malaise, and weakness, common to the onset of other infectious disease, occur infrequently.

The physical signs early in the disease may be slight to absent, particularly when the lesion is not peripherally situated.

ANALYSIS OF 114 CASES OF LOBAR PNEUMONIA IN ST. JOHN'S AND MORNINGSIDE HOSPITALS DURING THE YEAR 1935, AND THE FIRST FOUR MONTHS OF 1936

Sex—Males 70; Females 44

AGE GROUPS		INCIDENCE BY MONTHS	
3 to 9.....	21	January	18
10 to 19.....	26	February	28
20 to 29.....	14	March	26
30 to 39.....	20	April	22
40 to 49.....	16	*May	3
50 to 59.....	13	*June	2
60 to 69.....	3	*July	0
70 to —.....	1	*August	1
		*September	1
		*October	0
		*November	1
		*December	12
		*1935 only.	
Onset preceded by upper respiratory infection.....	60	Onset sudden	53
Onset not preceded by upper respiratory infection.....	43	Onset gradual	56
Unknown	11	Unknown	5

SYMPTOMS CLINICAL AND LABORATORY FINDINGS IN THE 114 CASES OF
LOBAR PNEUMONIA

CLINICAL SYMPTOMS		PHYSICAL FINDINGS	
Chill	55	Limited expansion	42
Pain	92	Dullness	72
Cough	100	Increased fremitus	28
Hemoptysis	38	Pectoriloquy	9
Vomiting	35	Bronchial breathing	39
Dyspnoea	20	Distant breath sounds	18
		Rales	65
WHITE BLOOD COUNT		PER CENT NEUTROPHILS	
5-10 thousand per c.c.	10	60-70%	5
11-15 thousand per c.c.	16	70-80%	25
16-20 thousand per c.c.	35	80-90%	56
21-30 thousand per c.c.	40	Over 90%	24
Over 30 thousand per c.c.	10		
ROENTGENOLOGICAL EXAMINATION		SPUTUM EXAMINATION	
Number of patients x-rayed	61	Sputum not examined	66
Number of patients not x-rayed	53	Sputum examined	48
X-ray evidence diagnostic of lobar pneumonia (60.4%)	32	Type I	10
		Type II	6
		Type III	3
		Type VII	3
		Other types pneumonia	26

Aside from the relatively high temperature and somewhat accelerated breathing there may be some restriction of movement on the affected side, depending upon whether or not a pleurisy is present. The breath sound may be somewhat suppressed and of a broncho vesicular character. Rales, if present, are of a crepitant or subcrepitant variety, although early they may be absent. Intensification of the whispered voice sound or pectoriloquy may be present early and is of considerable diagnostic import. There is usually no abnormality upon percussion. Frequently there is an accentuation of the second pulmonic heart sound, apparently due to the increased pressure in the pulmonary artery. Cyanosis of some degree is not uncommon early in those seriously ill with the disease. The sputum obtained soon after a chill is often streaked with blood, although the typically rusty sputum occurs later in the course of pneumonia. From the standpoint of the blood examination one of the most constant features is a marked increase of the leukocytes, particularly of the neutrophils which compose eighty to ninety per cent of the total cells. Counts below ten thousand are relatively rare, while counts up to forty thousand are exceedingly common.

The diagnosis of a fully developed pneumonia with dullness on percussion, tubular breathing, and fine crackling rales is not

difficult. On the other hand the diagnosis of the early case seen in the first twenty-four hours may be exceedingly difficult from a consideration of the symptoms and physical signs. Since the prognosis and successful treatment depends upon an early diagnosis it is of utmost importance that an accurate diagnosis be made. Two most important laboratory aids can be employed to furnish this necessary information. Graeser and Robertson of University of Chicago³ in a report on forty cases of pneumococcus pneumonia in which daily x-ray and physical observations were made, conclude that the x-ray was superior to physical signs in detecting the early lesion and in disclosing the extent of the process while consolidation was developing. Most of the original foci, as an area of increased density produced by the pulmonary lesion, appeared near the hilus and spread fan-like from this although in some instances the original focus appeared at the periphery and spread to the hilus. The lesion can be visualized within the first twenty-four hours.

An absolute early diagnosis of a pneumococcus pneumonia in which there are few or no physical signs can only be made by bacteriological examination of the sputum. Pneumococci have been divided into thirty-two distinct types which differ from each other biologically and in their immunological reactions. Of these, Types I

and II account for about sixty per cent of the cases of pneumonia, Type III about ten per cent, and the remaining twenty-nine types about thirty per cent. The older laborious methods of typing have recently been simplified to the extent that the entire procedure takes no longer than thirty minutes in which to identify the etiological type. The technic of this test, known as the Neufeld reaction, can easily be acquired within a few minutes. It depends upon the fact that when pneumococci are mixed with a homologous type of rabbit pneumococcus antiserum there occurs a swelling in the capsule of the pneumococcus within a very few minutes. This reaction according to Sabin is highly type specific.

The sputum to be typed should be less than two hours old although if kept on ice it may be typed some hours later. It is important that just a few organisms, two to three to the field, should be used, otherwise a typical reaction may not develop. This test may also be applied to blood, urine and exudates where sputum is not available.

The simplicity of this newer method of typing and the more recent refinement in pneumococcus antisera as devised by Felton have greatly increased the number of serum treated cases of pneumonia. The evidence accumulated in a large series of cases reported by Cecil and Plummer,⁴ Finland and Sutcliff,⁵ and Baldwin,⁶ have shown conclusively that pneumococcus

anti-sera has reduced the mortality rate in a startling manner. At the present therapeutic anti-sera are available commercially only against Types I, II, VII and VIII. The importance of this cannot be over-estimated when one considers that the death rate in Type I and II pneumonia has decreased from twenty-five to thirty per cent to ten and fifteen per cent. Unfortunately no anti-serum has been developed for Type III which has a mortality rate of forty-five to fifty per cent. Statistics relative to serum treated Type VII and VIII pneumonias which normally have rather low mortality rates are not as yet available. Recently Heffron,⁷ Field Director of the Massachusetts Pneumonia Study, has made the statement that over eighteen thousand lives in the United States might be saved annually by specific serum treatment. This is based upon an estimated annual total of one hundred and twenty-eight thousand cases of lobar pneumonia and four thousand cases of broncho pneumonia, all due to Type I and II pneumococci.

The best results by serum treatment are obtained early in the disease. Good results however have been obtained as late as ninety-six hours after the onset although the dosage will necessarily be greater. The effects produced by early administration are indeed dramatic. Often within thirty-six to forty-eight hours after the onset of a pneumonia there will occur a definite crisis characterized by a fall in temperature to normal or below, a lower pulse and

TREATMENT					
TYPE I—10:					
Received serum	9	Recovered	8	Died	1
No serum	1	Recovered	1	Died	0
TYPE II—6:					
Received serum	1	Recovered	1	Died	0
No serum	5	Recovered	3	Died	2
TYPE III—3:					
No serum		Recovered	1	Died	2
TYPE VII—3					
No serum		Recovered	3	Died	0
DIATHERMY					
. Treated	61*	Recovered	45	Died	16 26.2%
Not treated	53	Recovered	40	Died	13 24.5%
*Includes 4 serum treated cases.					
MORTALITY OF GROUP (114) LOBAR PNEUMONIAS					
Recovered	85	74.5%	Died	29	25.5%

respiratory rate, and a patient who, previously desperately ill, now appears to be entirely well.

Before serum is administered it is necessary to determine the patient's sensitivity. Serum is administered intravenously and slowly. Occasionally despite a negative sensitivity test, the patient will have an immediate reaction of an anaphylactic type. Succeeding doses of serum in such instances may be given diluted in 250 cc. of normal saline solution. The initial dose of serum given is ten to twenty thousand units. This is repeated at four to six hour intervals until the temperature becomes normal and there is a general definite improvement in the patient's condition. A total dosage of one hundred to two hundred thousand units may have to be employed and in Types II and VII much larger quantities are given. Treatment should be continued until the patient shows definite signs of recovery. Finland and Sutliff⁸ gave approximately five hundred and forty thousand units of concentrated Type II antibodies divided into six doses within the first twenty-four hours that treatment was instituted. They concluded that the death rate in forty-six controlled cases of Type II was considerably lowered due to early administration of large doses of serum and perseverance in the treatment of the severe cases.

CONCLUSION

It has been estimated that over four hundred thousand cases of pneumonia occur annually in the United States. Of these it can be anticipated that at least one hundred thousand will die.

From these statistics it is obviously seen that pneumonia is the most formidable infectious disease with which we have to deal.

When it is considered that hundreds of useful and worthy individuals, who would ordinarily die of pneumonia, could be saved by the application of specific measures, it becomes necessary that we as physicians give serious and intensive thought to this problem.

In connection with this, the importance of the early recognition of pneumococcus pneumonia cannot be over-emphasized since Types I and II which are responsible for sixty per cent of this group can be

successfully combated by the use of specific sera.

It is particularly essential that typing of sputa, facilities for which are available in the smallest communities, should be included as a means of accurate diagnosis.

Since efforts to prevent pneumonia have thus far been unsuccessful it is necessary and important that specific treatment, for those types of pneumonia for which curative sera have been developed, should be instituted early and persistently pursued.

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Hypoglycemic State in Treatment of Schizophrenia

Bernard Glueck, Ossining, N. Y. (Journal A. M. A., Sept. 26, 1936), states that the evidence is far from conclusive that the effects of the hypoglycemic state and of the insulin shock in patients with schizophrenia is something specific to this form of disorder. The average patient's reaction to this sudden deprivation of the organism of its sugar content has much in it of the nature of a profound organismal and personality disintegration. No other form of psychiatric therapy requires as much care, skill and caution in its application as does this. Four deaths have been recorded in connection with the treatment, three in Vienna and one in Switzerland, but it is impossible to state with accuracy what percentage this constitutes of the total treated. While undergoing the treatment, the patients appear to be in fine physical condition, usually gain weight, and, aside from a slight sense of fatigue, do not complain of physical discomfort during the time when they are not in the hypoglycemic state. The object is to achieve a progressive insulinization of the patient through the intramuscular administration of daily increasing doses of insulin until the so-called shock dose is attained.

Treatment of Dementia Paralytica: Comparative Study of Combined Artificial Hyperpyrexia and Tryparsamide Versus Therapeutic Malaria: Preliminary Report

Clarke H. Barnacle, Franklin G. Ebaugh and Jack R. Ewalt, Denver, (Journal A. M. A., Sept. 26, 1936), report on a comparative study of combined artificial fever and tryparsamide versus therapeutic malaria in the treatment of sixty cases of dementia paralytica over a one year period. Chemotherapy followed both methods. During this period in the artificial fever series seventy per cent (twenty-one patients) were definitely benefited while in the malaria group 63.3 per cent (nineteen cases) were likewise helped. The serologic reactions of the cerebrospinal fluid in both groups did not parallel the clinical results.

EMPYEMA*

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TULSA

Empyema may be defined as a collection of pus within the thorax, caused by pyogenic infection of the pleural cavity and is to be distinguished from pleuritic effusion. When a smear of the fluid aspirated from the thorax shows a pyogenic organism, the diagnosis of empyema is established.

Acute empyemas are of two sorts: first, post-pneumonic empyema which is preceded by a recognizable pneumonia, usually a lobar pneumonia, and the source of this infection is the pneumococcus. The second variety which is less well defined is one as to which it is difficult or impossible to say that the empyema has been preceded by pneumonia; either pneumonia and empyema go hand in hand or the empyema is a part of a general infection. This variety is called streptococcal empyema.

PATHOLOGY

The post-pneumonia is the variety most commonly encountered following a recognizable pneumonia. The reaction of the pleural sac to this invasion is very characteristic. There is poured out an exudate so highly fibrinous that not only are all surfaces covered with a thick, shaggy, white membrane, but great masses of pus soaked fibrin float into the cavity. This reaction has the effects of stiffening the mediastinum, gluing down the lung in whatever position it may have become adherent and so compressing it that it may lie flattened against the mediastinum and diaphragm. Fortunately the organization of the fibrin coat is so slow and incomplete that under ordinary conditions it tends to disappear upon efficient drainage and sterilization of the cavity, thus it does not forbid expansion of the lung but in the badly drained cases it is likely to become so thick and solid as to contain a permanent cavity if untreated to which the name of chronic empyema has been given.

The second variety which is not pre-

ceded by an outspoken pneumonia and which, in fact, is usually a streptococcal empyema. It is apt to be more serious than the post-pneumonic sort, the infectious agent is often a streptococcus of a violent hemolytic nature. Such empyemas are apt to complicate outbreaks of measles, influenza or other depressing diseases incident to the usual gathering of great groups of individuals.

Often streptococcal empyema seems to be a part of a generalized infection—septicemia. In this disease fluid may accumulate so rapidly as to mask those signs of pneumonia which might have been discovered had no fluid been present. The exudate is thin and may contain many bacterias even though very slightly cellular. It becomes steadily more purulent over a period of days or even weeks. But is never fibrinous enough in the early stages of the disease to stiffen the mediastinum or cause adhesions between the pleural surfaces. This sort of empyema must be included in the invasions of the pleural cavity by neighboring septic processes, such as subdiaphragmatic abscess, mediastinum abscess and wounds of the thoracic wall.

CLINICAL MANIFESTATION

The history of the unusual post-pneumonic empyema is often characteristic, the pneumonia will have run its course in a few days and there will be a slight rise of temperature in the afternoon and soon the patient becomes obviously septic. He fails to gain his strength and the exudate fills the pleural cavity until respiration becomes rapid and distressed.

The picture of streptococcal empyema is quite different from post-pneumonic empyema. When the disease has appeared in epidemic form its symptoms have become familiar, in its sporadic form it is less regularly recognized. There may be prodromal symptoms, especially weakness, fever and sometimes cough, but these rarely last over a few days and indeed a pa-

*Read before the Staff of St. John's Hospital, Tulsa, April, 1936.

tient may be quite prostrated and show signs of fluid in the chest within twenty-four hours after first feeling ill. The actual onset of empyema is usually marked by a respiratory distress, cyanosis, fever and perhaps chills and sweats and in such event, death may occur within a few days. Yet a milder onset more chronic in character and less characteristic is not uncommon.

PHYSICAL SIGNS

In most instances, signs of fluid in the thorax are present, that is, dullness to flatness, from the base upward on percussion, absent or distant breath sounds, diminished or absent fremitus. The absence of tactile fremitus is probably the most reliable sign the fluid level is not as likely to shift with change of position as in a simple effusion.

In all cases the infected side of the chest fails to move as usual with respiration and the interspaces may appear flattened or may actually bulge owing to the amount of fluid. The heart may be displaced only moderately or it may be entirely on the right side if the empyema is on the left. All patients with empyema are likely to appear fairly ill, anxious, pale or more or less cyanotic and distressed for breath. They cannot lie down in comfort. The temperature may be remittent or may run continuously high. The leucocytic count varies from ten or twelve up to sixty or seventy thousand.

Careful observers have been unable at times to distinguish pleural fluid from solid lung.

The x-ray is one of the greatest diagnostic aids of empyema, however it is not without its faults. The most positive diagnostic aid is the aspirating needle.

Acute empyema is not such a surgical emergency as appearance of the patient often suggests. Many very ill patients are suffering nearly as much from underlying pulmonary diseases or from a general infection, as from the great amount of fluid within the pleural cavity.

TREATMENT

In all of the cases of post-pneumonic type, they should be thoroughly aspirated so that the mediastinum has returned as nearly as possible to normal. Then the patient should be submitted to a rib resec-

tion and drainage tube inserted. Closed drainage in this type of empyema is never indicated. The patient will make much more rapid recovery from a rib resection. However in the streptococcus variety, especially of hemolyptic nature they should be all aspirated and air excluded until the pus becomes thick, and the patient becomes accustomed to this virulent infection.

I wish to call attention at this time to the incapsulating form of empyema which is much more difficult to locate than those that have just been described. There may be an incapsulated abscess due to adhesions. Here the x-ray plays a very important part as does the aspirating needle, and must be located and drained according to this locality.

My procedure in operating this class of patient is to have the patient lay on the side opposite from the side to be operated. The skin is to be prepared as for any other surgical procedure. The patient shall be draped and then a nitrous oxide and oxygen anaesthesia is started. Soon as the patient is under sufficiently, an incision is made over and down to the rib to be resected, generally the seventh rib on the right side or the eighth or ninth on the left, generally in the posterior axillary space, hemorrhage being controlled. Periosteum is split and dissected free from the rib. Rib shears inserted and at least two inches of rib being removed. At this time, the anaesthetist may be notified to lessen his anaesthesia and the pleura incised with a sharp knife and the finger inserted through the opening to be sure that you are at the base of the pleural cavity. This is very necessary, as if you are a rib too high, you will not get thorough drainage. A short, large drainage tube is inserted into the pleural cavity and anchored with a silk worm suture. The wound is closed and the patient returns to bed immediately, lying on his side that has been operated.

I do not recommend an immediate irrigation on these patients as long as you have free drainage. However, if you should use irrigations, they should not be started for two or three days, then a warm normal saline solution is best. The drainage tube should be removed on the fourth day or fifth, as the pleura at this time has become

adherent and a fistulous tract has been formed. The irrigations of normal saline can be continued through this fistula. It is well to have the patient at this time use forced expiration. However, if your drainage is at the base, as it should be, I doubt whether forced expiration does much good.

I have operated over a period of years, one hundred and eighty-six cases of empyema by rib resection and I can truly say that I have not had a chronic empyema to develop in any of these cases. However, I have operated several chronic empyemas where improper drainage had been done. I have had in these one hundred and eighty-six cases, three deaths, which I think would speak for itself as to the conservative methods used in preparing these patients and time to be operated.

Looking over the literature, I find a much higher mortality in excellent men's care. For instance, Dr. Mason of Birming-

ham, Alabama, treated one hundred and three cases in the Children's Hospital with a mortality of 7.06 per cent. Banna reported thirty-five cases with a mortality of 5.7 per cent. Strong reported thirty-seven cases with a mortality of 8 per cent.

Any proposed method of treatment should meet three requirements: first, it should promise a reduction in mortality; second, shorten the period of convalescence; third, reasonable assurance of cure.

In meeting these demands, the methods of aspiration even in the hands of more experienced and enthusiastic supporters fall far short of a satisfactory operative treatment.

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The Use of Papain in the Prevention of the Reformation of Peritoneal Adhesions*

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TULSA

The chapter in the history of surgery dealing with attempts to prevent the original formation or the reformation of peritoneal adhesions is an interesting and unfortunately still an unfinished one. The list of substances used for this purpose is almost as long as that concerned with intestinal suture methods. It is almost axiomatic in the field of medicine, however, that whenever a number of remedies are prescribed for a given condition none of them are very satisfactory. Omental grafts, sterilized peritoneum from animals (the Cargile membrane), oiled silk, silver foil, gold foil, amniotic membrane, mineral oil, olive oil, camphorated oil, vasoline, collodion, gum arabic, gelatine, peptonized milk, egg albumen, and other substances

have been advocated and discarded. Normal saline and hypertonic glucose have been used with indifferent results. Amniotic fluid was introduced by Johnson in 1927 and there was apparently experimental and clinical evidence of its effectiveness. It is available commercially today but has not been widely used largely because of conflicting reports as to its value.

Papain, the substance with which this paper is concerned, is a vegetable product obtained from the paw paw tree or carica papaya which has a proteolytic action. It is available commercially as a powder but in the ordinary form is not sterile. Since heat could not be used as it was destructive to the enzyme action, the problem of sterilization was a real one, but was worked out by Walton. The sterile pro-

*Read before Tulsa Clinical Society, Spring Meeting, 1936, Tulsa, Okla.

duct used by the essayist was supplied generously by Parke Davis and Company.

Papain was introduced in 1922 by Kubota who believed its proteolytic action on fibrin would make it effective in preventing the formation of fibrous adhesions. Ochsner and co-workers have been responsible for a vast amount of the experimental and clinical work with this substance and most of the material of this paper has been obtained from his writings. In addition, the statistics to be quoted are taken from a paper by Ochsner and Storck presented before the American Surgical Association.

In 1932 Ochsner and Garside reported the results of experiments on several groups of dogs and rabbits. Briefly put, they entered the abdomens of a large number of animals, rubbed the serosa over the ileum with gauze, in many cases adding tincture of iodine to this injury. Surviving dogs were re-operated after healing. At re-operation only those dogs in which dense adhesions were found were used. The adhesions were divided and papain solution left in the abdomen in closing, forty-four dogs and sixteen rabbits being used. Subsequent observation in this group showed that 93.75 per cent developed few or no adhesions. In a control group of fifteen animals in which at the second operation adhesions were divided and normal saline alone left in the abdomen, definite, dense adhesions were found later in 86.66 per cent of cases.

On the basis of this work in which papain had apparently been established as not only efficacious but harmless in proper solution, clinical trial seemed justified. Accordingly in November, 1932, it was used for the first time by the author. The patient was a young white woman of twenty-nine who had undergone three previous laparotomies. The first for appendicitis and the subsequent ones for intestinal obstruction. She continued to have evidence of chronic partial obstruction with occasional acute attacks of great severity marked by cramps, vomiting and distention. At operation loops of ileum were found attached to the under surfaces of the old abdominal scars by dense adhesions. In addition, about fifteen inches of lower ileum was attached by very tough fibrous bands to the posterior sur-

face of the right broad ligament and anterior surface of the cecum. All adhesions were divided, large raw areas being left. Three thousand cc. of one to sixty thousand papain-normal saline solution was left in the abdomen just before tying the last peritoneal suture. This patient has remained free from all evidence of intestinal obstruction since, although she had been troubled constantly from 1927 to 1932.

It is fully realized that a very long period of careful observation is required to determine the effectiveness of any method concerned with the prevention of reformation of adhesions as they may be present extensively and yet give no hint of their presence. As an instance, the last case in which papain was used was that of a young white male with intestinal obstruction from adhesions evidently produced by appendectomy fourteen years before.

Knowing the difficulty that exists in evaluating results, the acid test consists in the opportunity of re-entering abdomens in which papain has been used to prevent the reformation of divided adhesions and noting the effect. The essayist has had this opportunity in two cases. The first was that of a young white woman who developed an intestinal obstruction one month after being drained for a ruptured appendix. At operation very dense adhesions were present. The cecum was attached to the under surface of the old McBurney incision. The lower foot of ileum was adherent to the cecum and kinked on itself. Two loops of ileum and jejunum, respectively, were adherent to the posterior surfaces of the right and left broad ligaments. The adhesions were divided, several fragments of appendix removed, the badly involved tubes removed and the abdomen closed, leaving in 2,000 cc. of 1-60,000 papain-normal saline solution. An abscess developed, apparently retroceally, due, it was thought, to the infected fragments of appendix. This drained through the old McBurney incision. In another month intestinal obstruction again developed and the abdomen was entered a third time. The findings were flattering to the use of papain. There were no adhesions about the broad ligaments or on the anterior cecum. Ap-

parently all the trouble had developed as a result of the retrocecal abscess for in this region all the adhesions were found which occasioned the obstruction. No trace of the old adhesions remained.

The second application of the acid test was afforded when a huge multilocular ovarian cyst was removed from a thirty-nine-year old negro woman. The large mass was adherent, it seemed, to everything in the abdominal cavity. The gall-bladder, under surface of the liver, right kidney pouch, anterior surface of the cecum, loops of ileum and jejunum were attached by heavy adhesions. The division of those left large raw areas. The appendix was not removed as the patient's condition did not permit. One to sixty thousand and papain-normal saline solution, three thousand cc. was left in the abdomen. Three months later an acute appendix was removed and no trace of adhesions found.

These two cases alone prove little but added to similar observations by others at least justify continued use of papain if not premature enthusiasm as to its value. It has been used in twelve other cases since 1932. These were all pelvic operations in which extensive adhesions were divided and the employment of papain was considered prophylactic.

In the paper presented before the American Surgical Association by Drs. Ochsner and Storck, two hundred and thirty-one cases in which papain had been used were closely analyzed. Of these, one hundred and twenty-two patients had been previously operated and there had been three hundred and seventeen operations performed, making an average of two and one-half operations per patient. In this group one patient had been operated twenty-two times, another eighteen times, and two others eight times. Can any statement illustrate more forcefully the need for a substance which has the properties we hope are resident in papain? In the series reported were thirty-seven cases which had been subjected to the acid test of re-operation subsequent to the employment of papain. It is highly significant that in 94.5 per cent of these cases papain was effective in either completely eliminating or materially relieving adhesions. The mortality rate was 1.8 per cent, an

exceedingly low figure for this type of surgery, constituting strong proof of the harmlessness of papain properly prepared and used. It should be noted here that Dr. Ochsner now advocates a 1-20,000 solution of papain, using Hartman's solution as a diluent. Dr. Ochsner prepares his solution by emptying two of the twenty-five milligram ampoules of papain powder into a sterile mortar, adding Hartman's solution and using a pestle to hasten solution. Fifty milligrams of papain to each one thousand cc. of solution is employed. It was found personally convenient to inject the diluent through the rubber stopper into the vial of papain and shake vigorously, after this withdrawing the solution with a needle and adding it to the diluent to be used.

In a paper of such brevity only the surface could be scratched. It was hoped that interest in the use of papain could be stimulated in this section so that in the course of time no room for doubt would remain as to its value or lack of value. It seems unquestionably harmless, it has apparently been of value in various hands, and now, as with so many other things in medicine and surgery, we must be content to patiently record our observations and await the judgment of time and usage.

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Peritoneal Adhesions: Their Prevention by the Use of the Vegetable Ferment Papain. A Clinical Study. Alton Ochsner, M.D. and Ambrose Storck, M.D. From the Departments of Surgery, Tulane University School of Medicine, Hutchison Memorial Clinic, and Charity Hospital, New Orleans, La.

Slow Carbon Monoxide Asphyxiation: Neglected Clinical Problem

Harvey G. Beck, Baltimore (*Journal A. M. A.*, Sept. 26, 1936), reports on a series of carefully studied cases of slow carbon monoxide asphyxiation. The symptoms exhibited have been correlated with the pathologic lesions produced in experimental animals and found at autopsy. The results establish the fact that slow carbon monoxide asphyxiation (anoxemia) produces a definite clinicopathologic entity despite views held to the contrary. The symptoms arise predominately from organs rich in blood supply, thus demanding much oxygen, such as the central nervous system and the heart muscles. Owing to doubt and uncertainty as to the existence of the malady and a scant literature on the subject, the condition is not generally recognized by the profession and its importance has been underestimated. Since there is no medicinal remedy when the organic changes have once developed, treatment must be directed toward its prevention by proper public health measures.

Therapeutic Uses of Medicinal Gases in Office and Bedside Practice*

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TULSA

The use of medicinal gases in medical practice has been limited largely to the use of oxygen in pneumonia in which field it has proved to be of definite value. The fact that gases have not been more widely used is due chiefly to two reasons:

1. Lack of knowledge by the profession of many states in which therapeutic gases may be valuable.
2. Ignorance of method of administration.

The purpose of this paper is to present briefly a few common conditions in which administration of gases may be of therapeutic use, and to demonstrate the simplicity of administration.

USE OF OXYGEN IN OFFICE AND BEDSIDE PRACTICE

1. Local conditions: Infections of the skin and mucous surfaces constitute an interesting field for the use of oxygen. It has been applied with favorable results in pyogenic skin infections, including boils, abscesses and ulcers.

The technique of application is simple; a rubber or glass funnel being attached to the oxygen tank and the gas allowed to flow freely into the funnel which is held in place over the affected area. The procedure may be repeated at intervals during the day, the time of application being from ten to thirty minutes. For abscesses, a few hours after incision the gas may be applied by inserting a small rubber tube into the abscess cavity and allowing the oxygen to irrigate the cavity, so to speak. Very favorable results are reported in the literature, the time of drainage and resolution of tissues being considerably shortened.

The beneficial effects obtained in these

infections are speculative but may be due to two factors:

1. Oxygen may provide a medium which discourages growth of pyogenic bacteria.
2. Local tissue resistance may be influenced by diffusion of oxygen.

This applies also to the use of oxygen in ulcerative conditions of the skin. In one instance oxygen was used with unexplainable but dramatic results. This patient was a man with ulcers of twenty-five years duration on the anterior surface of the legs. He had suffered compound fractures of both legs, followed by development of large ulcers. He had extensive pathology, having a chronic nephrosis with hypertension and edema, superimposed on a leucitic background. The ulcers were finally healed but at intervals concurrently with a relapse in the nephritic condition the ulcerated area would break down. This was observed repeatedly at intervals of four to six weeks and always occurred in the same manner, as follows: Small bluish black vesicles occurred at one margin of the healed area, followed in twenty-four to thirty-six hours by discoloration and necrosis of an area which separated and was removed, leaving an ulcerated area. Having the oxygen set up for administration during his attacks of circulatory distress, the nurse experimented by placing the oxygen mask over the skin area, when the first changes appeared. Much to the gratification of the patient, as well as the doctor and nurse, the necrotic change was arrested. This was repeated whenever a vesicle appeared and to date, several months later, the lesions have not recurred. The oxygen was applied to the legs twice daily for ten minutes and continued even after the lesion appeared healed. The effect here was possibly due to the local effect on the tissue resistance, the skin being greatly attenuated and the

*Read before the Second Clinical Conference, Tulsa County Medical Society, Tulsa, June 20, 1936.

tissues edematous, interfering with the local nutrition.

In instances of widespread skin lesions the skin could be exposed more readily by placing an oxygen tent over the involved area.

The use of oxygen for amelioration of chronic low grade sinus infection depends on the same factors, *viz*, the discouragement of pyogenic bacteria by the oxygen media, and the increased vitality of the nasal mucosa which is often boggy, thickened and pale in color. The tissues should be shrunk gently by the application of ephedrin or similar medicament, and oxygen introduced by means of a small nasal catheter, or by a mask and bag or oxygen tent. The nasal catheter is the simplest and least expensive method.

These constitute a few of the common local conditions which may be improved by administration of oxygen.

CONSTITUTIONAL CONDITIONS

A large percentage of patients presenting themselves for medical service is suffering from chronic conditions, in which either a mild anemia, low grade chronic focal infection, or both are a contributing factor. Improvement in these conditions is necessarily slow, due to the reduced resistance of the patient and to the hypochronic anemia which may have resulted. The patient is very prone to become discouraged on account of the slowness of improvement, regardless of the admonition of the physician at the onset that treatment must necessarily be continued for a long time. In these conditions, the patient's morale may be greatly helped and the recovery hastened by the administration of oxygen. Even though it is not feasible to administer it daily, the results obtained are definite and beneficial. All the tissues are depressed from the relative oxygen want, the circulation and gastro-intestinal systems producing more pronounced symptoms, and many of these patients feel much improved for several hours after an oxygen treatment. In circulatory dysfunction, the results of the use of oxygen require no explanation, the period of rest for the overburdened myocardium

produced physical and mental rest for the anxious and distressed patient.

Closely related to circulatory disturbances are the metabolic disturbances, hyperthyroid state with the rapid metabolism being one of the more serious conditions. Dr. Waters at the *University of Wisconsin* has developed a system for continuous administration of oxygen to these patients both pre-and post-operatively. He has equipped some forty rooms with oxygen piped to the rooms so that connections can be easily made. He reports very gratifying results in various conditions and the method should be more widely used by hospitals and sanatoria. It can easily be used in the patient's home, with a little instruction to the attendant and supervision by the physician.

One of the most interesting fields, and one of recent development, is the use of oxygen in diseases of the colon. Joseph Felsen (New York) in *Archives of Internal Medicine*, November, 1931, gives a preliminary report of the results in treatment of forty patients with idiopathic ulcerative colitis, a disease which is very often disabling and resistant to treatment. In his series of cases, the diagnosis of idiopathic ulcerative colitis was determined by definite clinical and laboratory data, as follows:

1. Diarrhoea of varying intensity with mucus, blood, pus, accompanied by colic.

In acute stage, boggy, hyperaemic mucosa covered with blood or pus, and studded with abscesses, and ulcers; confluent ulcers of intestinal wall with stricture or diffuse narrowing in healing or healed cases.

2. Laboratory data—Following must be proved negative:
 - a. Cultural—B. typhosus, paratyphosus A and B and B dysenteriae.
 - b. Smear—B. tuberculosis.
 - c. Ova and parasites—Serologic studies: Negative Wasserman test. Negative agglutination studies against B. typhosus, para-

typhosus A and B, B. dysenteriae, etc.

The oxygenation of the intestine was done by running the oxygen from the tank through an ordinary wash bottle, rate of flow having been previously estimated by measuring the number of cubic centimeters of oxygen released per minute. About 250 cc. of oxygen was introduced alternate hours during the day. He had previously observed the capacity, distribution and ultimate disposal of the gas by means of serial roentgenograms. It was found that an adult can tolerate one liter without discomfort and that five minutes after administration the gas was distributed through the large and small intestine. The oxygen completely disappears before the sixth hour. Experimental work has proven that gases pass through the intestinal wall and in so doing follow the known laws of diffusion. Felson reports encouraging results in his series of forty patients and attributes the effects to the influence of oxygen on

1. The intestinal flora.
2. The intestinal tissue.

He makes the interesting observation that in most cases a secondary effect was apparent, namely, a marked increase in Hb. and the number of erythrocytes.

In *The Journal A. M. A.* of May 16, 1936, Golob of New York reports a case of prompt and marked improvement in a patient suffering from amebic dysentery. If these observations are not a coincidence, an interesting field is available for experimental therapy of the common as well as the rare diseases of the colon.

CARBON-DIOXIDE AND OXYGEN

The use of carbon-dioxide in oxygen depends on one property of gas, namely, that carbon-dioxide acts as a stimulant to the vasomotor center, increasing both the rate of output of the heart, the depth and rapidity of respiration and the blood pressure. If given in pure stage, carbon-dioxide acts as a depressant, but given with air or with oxygen it is a powerful stimulant. This, of course, suggests its use in depressed circulatory states, asthenia, and low blood pressure. Its chief use, however, is in re-

suscitation from asphyxiation from gas, or from drowning. The first aid crews of light and power and gas companies are trained and have the equipment to administer carbon-dioxide and oxygen. It is a sad commentary on the alertness of the medical profession that commercial organizations are better equipped for some emergencies than the physicians.

In alcohol and drug poisoning carbon-dioxide and oxygen is of value. A most important use however is in resuscitation of the new born infant. The use of the respirator in conjunction with carbon-dioxide and oxygen seems to be the most nearly physiologic method of initiating respiration in the apnoeic infant. In instances when delivery is effected by means of version or forceps delivery, the infant will breathe more promptly if carbon-dioxide is given to the mother for two or three minutes before extraction of the infant.

June, 1935, Alvan L. Barach of New York presented a paper on the use of helium as a new therapeutic gas. Its use depends on the lightness or decreased density as compared with air, the volume of gas requiring comparatively less effort. His summary is as follows: "In normal individuals breathing through a resistance and in compensated cardiacs a decrease in total of inspiratory and expiratory pressures of twenty-five to fifty per cent was obtained when helium (seventy-nine per cent) and oxygen (twenty-one per cent) was used instead of nitrogen and oxygen. The substitution of helium for nitrogen thus has a physiologic basis for the treatment of cases of respiratory obstruction from the larynx to the bronchiole and in those conditions in which respiratory fatigue is a factor. The present cost of the gas is nearly prohibitive but there is a bill now pending to permit its use for medicinal purpose under a special provision. For patients with asthma, pneumonia and cardiac failure, it offers considerable aid."

Possibly the sanatorium of the future will not only have rooms conditioned as to temperature and humidity, but also oxygen rooms, carbon-dioxide compartment for alcoholics and those poisoned by gas, rooms with helium and oxygen for asthmatics, cardiac patients and other respiratory diseases.

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EDITORIAL

"THE FILTER SYSTEM"

It is evident that in some counties the doctors have been imposed upon in the demand made upon them for professional care of the indigent sick. There seems to be no question but what the Welfare Boards, in some instances, have used the services of the doctors to advance their own political interests. In many instances excessive pressure has been made upon the county physician to admit cases to the hospital for medical care, and in view of these facts it might be well, at least in some counties throughout the state, to perfect a plan by virtue of which we would have positive assurance, first, that the applicant for medical service is deserving of this service from an economic standpoint and unable

to pay any part of the expense for the hospitalization and medical care; second, that we should be assured that the patient is actually in need of the hospitalization and special service.

Now to overcome these difficulties and be assured of the above conditions it might be well to establish two filters, similar to the Filter System which has been adopted in the State of Michigan. By virtue of this system there would be established, first, an economic filter and, second, a medical filter. The economic filter would be composed of the County Judge and two representative business men (not politicians) who would investigate relative to the economic status of the applicant requesting medical care. The reason for having the County Judge as a member of the filter is that he has authority to administer oaths and it would be possible then to obtain sworn evidence. The investigation by these three would determine definitely the economic status of the applicant.

The medical filter would be composed of the County Health Officer, one Surgeon and one Eye, Ear, Nose and Throat specialist. This filter would determine the necessity of medical care and whether or not the condition was an emergency, demanding hospitalization.

Now it would appear that after an applicant is acted upon favorably by these two filters it would be a proper case for hospitalization and special care. Should either filter find reason to object to admitting the applicant for hospitalization the case would then be dismissed so far as this sort of assistance is concerned.

By the application of this method it would seem that the medical profession would receive the protection they justly deserve and would not be called upon to operate elective cases where emergency hospitalization is unnecessary, and would not be called upon to do work free of charge for people who might be in position at some future time to meet this expense.

As mentioned above, arrangements similar to these have been in operation in the State of Michigan and we are informed that it is operated with great satisfaction both to the laity and to the medical profession.

ANNUAL DUES

The time is rapidly approaching when the Annual Dues will again be payable, and I am calling your attention to the fact that the House of Delegates, at the Annual Meeting in Enid, adopted a resolution changing the amount of the dues of the State Association from four dollars to eight dollars per year.

This fact is just being brought to the attention of the Secretaries of the Component County Societies and the membership at large in order that there may be no misunderstanding.

Editorial Notes—Personal and General

DR. WALTER H. MILES, Oklahoma City, has returned from New Orleans where he attended a Public Health convention.

DR. LEROY LONG, Oklahoma City, was elected a member of the board of governors of the American College of Surgeons at their recent meeting in Philadelphia.

DR. LEWIS J. MOORMAN, Oklahoma City, attended the meeting of the American Clinical and Climatological Association held in Richmond, Va., in October.

News of the County Medical Societies

WOODWARD County Society met in regular session at the Baker Hotel in Woodward Tuesday, October 13th. Dinner was served at seven p. m. Dr. Day of Supply, president, presided.

Twenty-two physicians and their ladies attended. After dinner the ladies held the regular meeting of the Auxiliary, after which they again joined the physicians for the scientific program.

Dr. V. M. Rutherford presented a most interesting paper, "Undulant Fever with Case Report."

Dr. C. E. Williams gave an instructive talk upon the care of the "Little Things" in eye and ear troubles.

Both papers were outstanding and brought forth free discussion.

Adjourned to meet in Supply with the staff of the Western Hospital December 8th for the annual meeting.

OKMULGEE-OKFUSKEE County Medical Societies met October 19th in Henryetta. Following the six o'clock dinner, Drs. Wm. L. Bonham and M. F. Jacobs, Oklahoma City, presented "Diseases of the Floor of the Mouth" and "Chronic Ulcerative Colitis," respectively. Legislative matters were discussed by all present.

LEGISLATIVE FUND

County	Allotment	Amt. Paid
Adair	\$ 40.00	
Alfalfa	70.00	
Atoka-Coal	30.00	\$ 10.00
Beckham	140.00	130.00
Blaine	90.00	
Bryan	240.00	140.00
Caddo	240.00	
Canadian	230.00	
Carter	260.00	
Cherokee	30.00	
Choctaw	70.00	60.00
Cleveland	270.00	
Comanche	190.00	
Cotton	90.00	
Craig	150.00	80.00
Creek	330.00	185.00
Custer	230.00	210.00
Garfield	420.00	250.00
Garvin	150.00	150.00
Grady	230.00	160.00
Grant	40.00	
Greer	110.00	
Harmon	80.00	
Haskell	60.00	40.00
Hughes	170.00	
Jackson	160.00	120.00
Jefferson	110.00	
Johnston	10.00	
Kay	320.00	280.00
Kingfisher	90.00	
Kiowa	170.00	
Latimer	40.00	
LeFlore	160.00	100.00
Lincoln	150.00	50.00
Logan	200.00	100.00
Major	30.00	
Marshall	50.00	
Mayes	110.00	20.00
McClain	60.00	
McCurtain	70.00	
McIntosh	60.00	50.00
Murray	110.00	
Muskogee	520.00	30.00
Noble	40.00	
Nowata	50.00	50.00
Okfuskee	150.00	100.00
Oklahoma	2740.00	1060.00
Okmulgee	280.00	210.00
Osage	220.00	140.00
Ottawa	310.00	
Pawnee	100.00	90.00
Payne	250.00	160.00
Pittsburg	350.00	180.00
Pontotoc	300.00	290.00
Pottawatomie	330.00	160.00
Pushmataha	80.00	
Rogers	120.00	60.00
Seminole	320.00	110.00
Sequoyah	10.00	
Stephens	220.00	
Texas	50.00	20.00
Tillman	100.00	
Tulsa	1980.00	
Wagoner	40.00	
Washington	250.00	240.00
Washita	120.00	
Woods	190.00	140.00
Woodward	260.00	140.00

NOTE—Corrections and additions to the above list will be appreciated.

PROPOSED STATE LEGISLATION

A PROPOSED BILL TO BE PRESENTED TO THE 1937 LEGISLATURE FOR ENACT- MENT INTO A LAW

SENATE BILL No.....

AN ACT RELATING TO THE PRACTICE OF THE HEALING ART IN THE STATE OF OKLAHOMA, PRESCRIBING CERTAIN PENALTIES FOR VIOLATION THEREOF, ESTABLISHING A STATE BOARD OF EXAMINERS IN THE BASIC SCIENCES UNDERLYING THE PRACTICE OF THE HEALING ART, PROVIDING FOR THE ORGANIZATION AND POWERS OF SAID BOARD AND MAKING CERTIFICATION THEREBY A PREREQUISITE TO ELIGIBILITY FOR EXAMINATION FOR LICENSE TO PRACTICE ANY BRANCH OF THE HEALING ART, DEFINING THE HEALING ART, EXCEPTING CERTAIN PROFESSIONS, AND PERSONS FROM THE PROVISIONS OF SAID ART, AND DECLARING AN EMERGENCY.

BE IT ENACTED BY THE PEOPLE OF THE STATE OF OKLAHOMA:

SECTION 1. No person shall be permitted to take an examination for a license to practice the healing art or any branch thereof, or be granted any such license, unless he has presented to the board or officer empowered to issue such a license as the applicant seeks, a certificate of ability in anatomy, physiology, chemistry, bacteriology, and pathology (hereinafter referred to as the basic sciences), issued by the State Board of Examiners in the basic sciences.

SECTION 2. For the purposes of this Act, the term healing art includes any system, treatment, operation, diagnosis, prescription, or practice for the ascertainment, cure, relief, palliation, adjustment, or correction of any human disease, ailment, deformity, injury, or unhealthy or abnormal physical or mental condition.

SECTION 3. The Governor, within thirty days after this Act takes effect, shall appoint a State Board of Examiners in the basic sciences (hereafter referred to as the Board), consisting of five members. The members of said Board shall be appointed one for one year, one for two years, one for three years, one for four years, and one for five years, from the dates of their respective appointments. On the expiration of the term of any member, the Governor shall fill the vacancy by appointment for a term of five years. On the death, resignation, or removal of any member, the Governor shall fill the vacancy by appointment for the unexpired portion of the term. Every member shall serve until his successor is appointed and qualified. The members of the Board shall be selected because of their knowledge of the basic sciences aforesaid, and each shall be a professor, assistant or associate professor or an instructor on the faculty of the University of Oklahoma, Oklahoma Agricultural and Mechanical College, or some other institution of learning in the State of Oklahoma of equal rank with said named institutions. Each member shall have resided in Oklahoma not less than one year next preceding his appointment. No member of the Board shall be actively engaged in the practice of the healing art or of any branch thereof.

SECTION 4. The Board shall organize as soon as practicable after its appointment. It shall have

authority to elect officers, to adopt a seal, and to make such rules as it deems expedient to carry this act into effect. The Board shall keep a record of all its proceedings, which shall be prima facie evidence of all matters contained therein, and of such proceedings. Every member shall receive Ten (\$10.00) Dollars per diem and actual expenses, when actively engaged in the discharge of his statutory duties. The compensation of the members and the other expenses of the Board shall be paid out of the fees received from applicants, but this is not to be construed as preventing appropriations to cover deficits. The treasurer of the Board shall give such bond, running in favor of the State, in such an amount and with such conditions as the state treasurer may prescribe. The office of the Board shall be at the University of Oklahoma, in Norman, in Cleveland county, Oklahoma, and quarters therefore, in the State University or in some other building assigned thereto by the State Board of Public Affairs.

SECTION 5. The fee for examination by the Board shall be Fifteen (\$15.00) Dollars. The fee for re-examination within any twelve month period after a failure to pass the original examination shall be Ten (\$10.00) Dollars but the fee for re-examination after the expiration of said twelve months shall be the same as the original fee. The fee for the issuance of a certificate by authority or reciprocity, on the basis of qualifications as determined by the proper agency of some other state, territory, or the District of Columbia, or other jurisdiction forming a part of the United States, or a foreign country, shall be Fifty (\$50.00) Dollars. All fees shall be paid to the Board by the applicant when he files his application. The Board shall pay all money received as fees into the state treasury, to be placed in a special fund to the credit of the Board designated "The Basic Science Fund." The state treasurer shall pay out of such fund all expenses incurred by the Board, on vouchers signed by the president and the secretary of the Board.

SECTION 6. The Board shall conduct examinations twice a year and at such other times and at such other places as it deems best. Every applicant, except as hereinafter provided, shall be examined to determine his knowledge, ability, and skill in the basic sciences. The examinations shall be conducted in writing, but may be supplemented by oral examinations and may also be supplemented by examinations in the laboratory, dissecting room, and dispensary, and at the bedside. If the applicant receives a credit of 75 per cent or more in each of the basic sciences, he shall be considered as having passed the examination, and shall be entitled to have issued to him by the Board, a certificate of ability in the basic sciences. If the applicant receives less than 75 per cent in one subject and receives 75 per cent or more in each of the remaining subjects, he shall be allowed a re-examination at the examination next ensuing, on application therefor and the payment of the prescribed fee and he shall be required to be re-examined only in the subject in which he received a rating less than 75 per cent. If the applicant receives less than 75 per cent in more than one subject, he shall not be re-examined unless he presents proof satisfactory to the Board, of additional study in the basic sciences, sufficient to justify re-examination, which re-examination shall be on all basic science subjects.

SECTION 7. No certificate shall be issued by the Board unless the person applying for it submits

evidence, satisfactory to the Board, first, that he is not less than nineteen years old; second, that he is a person of good moral character; and, third, that before he began the study of the healing art, he was graduated by a high school accredited by the University of Oklahoma, or a school of similar grade, or that he possesses educational qualifications equivalent to those required for graduation by such an accredited high school; and fourth, that he has a comprehensive knowledge of the basic sciences as shown by his passing the examination given by the Board, as by this Act required. This shall not be construed to prevent the issue of certificates under the provisions of Section 8 of this Act.

SECTION 8. The Board may in its discretion waive the examination required by Section 7 when proof satisfactory to the Board is submitted showing, in addition to the other requirements of Section 7 herein, first, that the applicant has passed in another state, territory, or the District of Columbia, or other jurisdiction forming a part of the United States, or of a foreign country, an examination in the basic sciences or before a State Board authorized to issue licenses to practice the healing art; second, that the requirements of that State are not less than those required by this Act as a condition precedent to the issuance of a certificate; and, third, that the Board of Examiners in the Basic Sciences, or State Board in that state grant a like exemption from examination of the basic sciences to persons holding certificates from the State Board of Examiners of Basic Sciences of Oklahoma, holding licenses to practice the healing art according to the method or school that the applicant proposes to follow, issued after examination by the proper licensing Board of Oklahoma.

SECTION 9. After the results of such examination are known, the secretary of the Board shall file with the secretary of state, a report showing the results of each applicant's examination so that such report and record of grades shall constitute an official record in the Department of Secretary of State, and this report shall show the grades of those who failed as well as those to whom certificates were issued.

SECTION 10. Any person aggrieved by any action of the Board may appeal to the District Court of Cleveland county, Oklahoma. Such appeal shall be taken within thirty days from the date of filing of report with the Secretary of State, by serving on the Secretary of the Board a notice of appeal, stating the action from which the appeal is taken, the part thereof from which the appeal is taken, if the appeal is from an order of the Board, and filing with the Secretary of the Board a bond in the sum of Five Hundred (500.00) Dollars, conditioned for the payment of all costs of the appeal and all damages sustained by any person because of the applicant's failure to comply with the terms of the action or order of the Board, if such action or order be held to be legal and valid. On the filing and approval of such bond, the action, or order, or the part thereof appealed from, shall be stayed pending the final determination of the controversy. Immediately on the perfecting of such appeal, the secretary of the Board shall transmit to the clerk of the court of such county, the notice of the appeal and the bond, and a certified copy of all proceedings of the Board relating to the action or order from which the appeal is taken; and such cause shall thereupon stand for trial at the first regular term of court thereafter.

SECTION 11. Any basic science certificate and any license to practice the healing art or any branch thereof, issued contrary to this Act, is void. Any licensing Board which has issued a license on the basis of a void basic science certificate shall revoke or cancel that license. The procedure for

such revocation or cancellation shall be in accordance with the provisions of the Act under which such license was issued, authorizing the cancellation or revocation of licenses generally. The certificate issued to any person by the State Board of Examiners in the basic sciences shall be revoked automatically by the revocation of his license to practice the healing art or any branch thereof.

SECTION 12. Any person who practices the healing art or any branch thereof without having obtained a valid certificate from the State Board of Examiners in the basic sciences, except as otherwise authorized by this Act, shall be guilty of a misdemeanor and punished by a fine of not more than \$500.00, or by imprisonment in the County Jail for not more than six months, or both, in the discretion of the court.

SECTION 13. Any person who obtains or attempts to obtain a basic science certificate by dishonest or fraudulent means, or who forges, counterfeits, or fraudulently alters any such certificate, shall be guilty of a felony and shall be punished by a fine of not more than One Thousand (\$1,000.00) Dollars, or by imprisonment in the State penitentiary for not more than one year, or both, in the discretion of the court.

SECTION 14. Any person who obtains, or attempts to obtain a license to practice the healing art or any branch thereof from any Board or officer authorized to issue any such license, without presenting to said Board or officer a valid certificate issued to the applicant by the State Board of Examiners in the basic sciences, as in this Act required, shall be guilty of a misdemeanor and punished by a fine of not more than Five Hundred (\$500.00) Dollars, or by imprisonment in the County Jail for not more than six months, or both, in the discretion of the court.

SECTION 15. Any person who knowingly issues or participates in the issue of a license to practice the healing art or any branch thereof, first, to any person who has not presented to the licensing Board a valid certificate from the State Board of Examiners in the basic sciences, or, second, to any person who has presented to such licensing Board a certificate obtained from the State Board of Examiners in the basic sciences by dishonesty or fraud, or by any forged or counterfeit certificate, shall be guilty of a misdemeanor and punished by a fine of not more than Five Hundred (\$500.00) Dollars, or by imprisonment in the County Jail for not more than six months, or both, in the discretion of the court.

SECTION 16. A person who has paid money or anything of value to a person not authorized to practice the healing art or a branch thereof, as compensation for services rendered in the practice of the healing art or a branch thereof, when the payer did not know at the time of payment that the payee was neither the holder of a certificate issued by the State Board of Examiners in the basic sciences nor authorized to practice without such a certificate, may recover such money or the value of the thing paid, by an action at law instituted within two years from the date of payment.

SECTION 17. The State Board of Examiners in the basic sciences and the several Boards authorized to issue licenses to practice the healing art and branches thereof shall investigate every supposed violation of this Act, coming within the scope of the authority of such Boards, respectively, and report to the County Attorney of the county in which such violation occurred, all cases that in the judgment of the Board warrant prosecution. Every police officer, sheriff, and peace officer shall investigate every supposed violation of this Act that comes to his notice or of which he has received

complaint and apprehend and arrest all violators. It shall be the duty of the Attorney General to aid the several County Attorneys in the prosecution of violation of this Act.

SECTION 18. This Act shall not be construed as applying to dentists, pharmacists, nurses, optometrists, and chiroprodists, practicing within the limits of their respective callings; nor to persons licensed to practice the healing art or any branch thereof, in Oklahoma, when this Act takes effect; nor to persons specifically permitted by law to practice without licenses, who practice each within the limits of the privilege thus granted to him.

SECTION 19. Nothing in this Act shall be construed as repealing any statutory provision in force at the time of its passage with reference to the requirements governing the issue of licenses to practice the healing art or any branch thereof, or as in any way lessening such requirements. But the Board authorized to issue licenses to practice the healing art or any branch thereof, may in its discretion either accept certificates issued by the Oklahoma Board of Examiners in the basic sciences in lieu of examining the applicants in such sciences, or it may examine such applicants in such sciences. The unconstitutionality of any part of this Act shall not be construed as invalidating any other separable parts of it.

SECTION 20. This Act may be cited as Basic Science Act, 1937.

SECTION 21. All Acts and parts of Acts contrary to the provisions of this Act, or inconsistent therewith, are hereby repealed.

SECTION 22. It being immediately necessary for the preservation of the public peace, health and safety, an emergency is hereby declared to exist, by reason whereof this Act shall take effect and be in full force from and after its passage and approval.

O

**A PROPOSED BILL TO AMEND THE MEDICAL
PRACTICE ACT OF THE STATE OF OKLA-
HOMA TO BE PRESENTED TO THE 1937
SESSION OF LEGISLATURE FOR
ENACTMENT**

**BE IT ENACTED BY THE PEOPLE OF THE
STATE OF OKLAHOMA:**

SECTION 1. Section 4624 Oklahoma Statutes 1931, is hereby amended to read as follows:

"Section 4624. There is hereby created a State Board of Medical Examiners consisting of five members."

SECTION 2. Section 4625 Oklahoma Statutes 1931, is hereby amended to read as follows:

"Section 4625. The Governor shall appoint the members of the Board of Medical Examiners. No person shall be appointed as a member who has not obtained a license to practice medicine and surgery in the State of Oklahoma and who has not practiced in the State under the authority of that license for a period of three years immediately preceding the appointment. The members of the Board first appointed shall hold their offices for one, two, three, four and five years expiring December 31st of said years. Said Board first appointed shall be chosen by the Governor from a list of twenty-five names to be submitted to the Governor by the Council of the Oklahoma State Medical Association. Annually thereafter Council of the Oklahoma State Medical Association shall submit to the Governor the names of five persons eligible to the appointment and from this list the Governor shall appoint one member to fill the vacancy annually occurring on the State Board of Medical Examiners, who shall serve for a term of five years, expiring December

31st, or until his successor shall be appointed and qualified. No member shall be a stockholder in or member of the faculty or board of trustees of any medical college or school."

SECTION 3. Section 4626 Oklahoma Statutes 1931, is hereby amended to read as follows:

"Section 4626. Any vacancy in the membership of the Board caused by death, resignation or otherwise, shall be filled for the period of the unexpired term in the same manner as original appointments."

SECTION 4. Section 4628 Oklahoma Statutes 1931, is hereby amended to read as follows:

"Section 4628. The State Board of Medical Examiners shall elect from its own membership a president, vice-president and a secretary-treasurer, each to serve for such term as the board may designate."

SECTION 5. Section 4642 Oklahoma Statutes 1931, is hereby amended to read as follows:

Section 4642. In case any applicant for license or certificate under any form herein provided for, shall feel aggrieved or dissatisfied with the official action of the board thereon, he shall have the right to have all his records reviewed by an appeal to a board, composed of the Attorney General, State Superintendent of Health and Dean of the University of Oklahoma School of Medicine."

SECTION 6. Section 4652 Oklahoma Statutes 1931, is hereby amended to read as follows:

"Section 4652. The words 'Unprofessional conduct' as used in this Act are hereby declared to mean:

"First: Procuring, aiding or abetting a criminal operation or abortion.

"Second: Advertising in any manner, either in his own name or under the name of another person, firm, association or corporation, in any newspaper, pamphlet, circular, or other written or printed paper or document, the treatment of or the curing of venereal diseases, or the private diseases peculiar to men and women, or the advertising, or holding himself out to the public, in any manner as a specialist in the diseases of the sexual organs, or diseases caused by sexual weakness, self-abuse or excessive indulgence, or in any disease of like nature produced by like causes, or the restoration of "lost manhood" or the advertising of any medicine or any means whatsoever whereby the monthly periods of women can be restored or regulated or the menses be re-established, if suppressed, or being employed by, or in the service of, any person, firm, association or corporation so advertising.

"Third. The obtaining of any fee or offering to accept any fee, present or other form of remuneration whatsoever, on the assurance or promise that a manifestly incurable disease can or will be cured.

"Fourth. Wilfully betraying a professional secret to the detriment of the patient.

"Fifth. Habitual intemperance or the habitual use of the habit-forming drugs.

"Sixth. Conviction of a felony or any offense involving moral turpitude.

"Seventh. The employment of what is commonly known as 'cappers' or 'steerers' in procuring practice.

"Eighth. All advertising of medical business in which statements are made which are grossly untrue or improbable and calculated to mislead the public.

"Ninth. Conviction or confession of a crime involving the violation of the anti-narcotic or pro-

hibition laws and regulations of the Federal Government, or the Board of Health laws and regulations of the State of Oklahoma.

"Tenth. Dishonorable or immoral conduct.

"Eleventh. Professional connection with, or lending one's name to any person engaged unlawfully in the practice of medicine and surgery; or engaging in the practice of medicine or surgery under any name other than the one specified on the license of the licentiate."

SECTION 7. Section 4653 Oklahoma Statutes 1931, is hereby amended to read as follows:

"Section 4653. It shall be unlawful for any person licensed to practice medicine and surgery to practice under any name other than his own."

SECTION 8. Section 4655 Oklahoma Statutes 1931, is hereby amended to read as follows:

"Section 4655. The salary of the secretary of the Board of Medical Examiners shall be Twelve Hundred (\$1,200.00) Dollars per annum, and other members of said board shall receive a per diem of Twenty (\$20.00) Dollars for each and every day of actual service in the discharge of their duties under this Act. It is herein provided that the secretary may, by the direction of the board, employ a stenographer, whose salary will not exceed One Hundred (\$100.00) Dollars per calendar month. It is further provided that the necessary expenses of each member, the secretary and the stenographer of the board, including office equipment and supplies incurred in the discharge of the official duties thereto pertaining, shall be paid, by direction of the board, out of the funds of the board and such traveling expenses incurred in the discharge of duties outside the State shall be included."

SECTION 9. It being immediately necessary for the preservation of the public peace, health and safety, an emergency is hereby declared to exist, by reason whereof this Act shall take effect and be in full force from and after its passage and approval.

News Notes of Woman's Auxiliary

The aim of the Medical Auxiliary is "Every Eligible Doctor's Wife an Auxiliary Member."

Slogan: "Know Your Auxiliary; Be an Informed Member."

The State Officers and Standing Committees are as follows:

Organization

National Chairman—Mrs. David S. Long, Long Crest, Harrisonville, Mo.

State Chairman—Mrs. Hugh Jeter, 912 E. 15th, Oklahoma City, Oklahoma.

Cleveland—Mrs. D. G. Willard, 624 Tulsa, Norman, Oklahoma.

Garfield—Mrs. J. L. Walker, 1625 E. Broadway, Enid, Oklahoma.

Oklahoma—Mrs. Carroll M. Pounders, 904 N. E. 19th, Oklahoma City, Oklahoma.

Pittsburg—Mrs. (Dr.) Fulton, Atoka, Oklahoma.

Pottawatomie—Mrs. Eugene Rice, (Pres.), 202 N. Beard, Shawnee, Oklahoma.

Tulsa—Mrs. F. L. Flack, (Pres.), 1747 S. Florence, Tulsa, Oklahoma.

Woodward—Mrs. J. M. McMillan, Supply, Okla.

Press and Publicity

National Chairman—Mrs. Jas. P. Simonds, 25 E. Walton Place, Chicago, Ill.

State Chairman—Mrs. Elias Margos, 2739 N. W. 18th, Oklahoma City, Oklahoma.

Cleveland—Mrs. J. J. Gable, 101 State Drive, Norman, Oklahoma.

Garfield—Mrs. Bruce Hinson, 1017 W. Wabash, Enid, Oklahoma.

Pittsburg—Mrs. Walter Dell, 601 S. Second St., McAlester, Oklahoma.

Oklahoma—Mrs. Henry W. Harris, 909 N. E. 18th, Oklahoma City, Oklahoma.

Pottawatomie—Mrs. Eugene E. Rice, (Pres.), 202 N. Beard, Shawnee, Oklahoma.

Tulsa—Mrs. Fred E. Woodson, 1904 S. Florence, Tulsa, Oklahoma.

Woodward—Mrs. C. E. Williams, Woodward, Oklahoma.

Hygeia

National Chairman—Mrs. James D. Lester, 208 21st Ave. S. Nashville, Tenn.

State Chairman—Mrs. Frank Stuart, 1203 S. Richmond, Tulsa, Oklahoma.

Cleveland—Mrs. Ben Cooley, 808 Classen, Norman, Oklahoma.

Garfield—Mrs. P. W. Hopkins, 423 W. Pine, Enid, Oklahoma.

Pittsburg—Mrs. F. J. Baum, 632 Adams, McAlester, Oklahoma.

Pottawatomie—Mrs. Eugene Rice, (Pres.), 202 N. Beard, Shawnee, Oklahoma.

Tulsa—Mrs. H. Lee Farris, 2214 E. 25th Place, Tulsa, Oklahoma.

Oklahoma—Mrs. Onis Hazel, 707 N. E. 15th, Oklahoma City, Oklahoma.

Woodward—Mrs. F. C. Camp, Buffalo, Oklahoma.

Public Relations Committee

National Chairman—Mrs. J. Boner White, 769 Penn. Ave., N. E. Atlanta, Ga.

State Chairman—Mrs. George Garrison, 1144 N. W. 27th, Oklahoma City, Oklahoma.

Cleveland—Mrs. C. S. Bobo, 514 Elm Ave., Norman, Oklahoma.

Garfield—Mrs. Glenn Francisco, 1810 W. Oklahoma, Enid, Oklahoma.

Pittsburg—Mrs. L. S. Willour, 6th and South, McAlester, Oklahoma.

Pottawatomie—No chairman's name submitted. President, Mrs. Eugene E. Rice, 202 N. Beard, Shawnee, Oklahoma.

Oklahoma—Mrs. Henry H. Turner, 525 N. W. 13th, Oklahoma City, Oklahoma.

Tulsa—Mrs. Hugh C. Graham, 1503 S. Baltimore, Tulsa, Oklahoma.

Woodward—Mrs. O. C. Newman, Shattuck, Oklahoma.

Program (Health Education)

National Chairman—Mrs. V. E. Holcomb, 1106 Virginia St., Charleston, W. Va.

State Chairman—Mrs. Chas. A. Brake, Hospital Grounds, Norman, Oklahoma.

Cleveland—Mrs. G. M. Clifton, 116½ E. Main, Norman, Oklahoma.

Garfield—Mrs. Glenn Francisco, 1810 W. Oklahoma, Enid, Oklahoma.

Oklahoma—Mrs. Henry H. Turner, 525 N. W. 13th, Oklahoma City, Oklahoma.

Pittsburg—Mrs. Walter Dell, 601 South Second, McAlester, Oklahoma.

Pottawatomie—Mrs. Eugene Rice, (Pres.), 202 N. Beard, Shawnee, Oklahoma.

Tulsa—Mrs. Hugh C. Graham, 1503 S. Baltimore, Tulsa, Oklahoma.

Woodward—Mrs. O. C. Newman, Shattuck, Oklahoma.

Historian

National Historian—Mrs. William Hibbets, 2525 Wood Ave., Texarkana, Ark.

State Historian—Dr. Winnie Sanger, 1909 N. W. 22nd, Oklahoma City, Oklahoma.

Cleveland—Mrs. H. B. Kniseley, 333 E. Macy, Norman, Oklahoma.

Garfield—Mrs. S. H. McEvoy, 1823 W. Main, Enid, Oklahoma.

Oklahoma—Mrs. Walter Morledge, 605 Eubanks, Oklahoma City, Oklahoma.

Pittsburg—Mrs. Walter Dell, 601 South Second, McAlester, Oklahoma.

Pottawatomie—Mrs. Eugene Rice, (Pres.), 202 N. Beard, Shawnee, Oklahoma.

Tulsa—Mrs. Fred E. Woodson, 1904 S. Florence, Tulsa, Oklahoma.

Woodward—Mrs. H. K. Hill, Laverne, Oklahoma.

Student Loan

State Chairman—Mrs. J. M. Byrum, 1703 N. Broadway, Shawnee, Oklahoma.

Cleveland—Mrs. R. D. Lowther, 502 S. Crawford, Norman, Oklahoma.

Garfield—Mrs. F. A. Hudson, (Pres.), 1001 W. Elm, Enid, Oklahoma.

Oklahoma—Mrs. Hugh Jeter, 912 E. 15th, Oklahoma City, Oklahoma.

Pittsburg—Mrs. J. F. Parks, 1220 S. 7th, McAlester, Oklahoma.

Pottawatomie—Mrs. Eugene Rice, (Pres.), 202 N. Beard, Shawnee, Oklahoma.

Tulsa—Mrs. Frank L. Flack, (Pres.), 1747 S. Florence, Tulsa, Oklahoma.

Woodward—Mrs. T. C. Leachman, Woodward, Oklahoma.

The County Officers and Standing Committees are as follows:

Cleveland

President—Mrs. O. E. Howell, 844 Chautauqua, Norman, Oklahoma.

Vice President—Mrs. C. A. Brake, Hospital Grounds, Norman, Oklahoma.

Secretary—Mrs. J. L. Haddock, 756 S. Jenkins, Norman, Oklahoma.

Treasurer—Mrs. Carl Steen, 103 State Drive, Norman, Oklahoma.

Garfield

President—Mrs. F. M. Hudson, 1001 W. Elm, Enid, Oklahoma.

Oklahoma

President—Mrs. F. Redding Hood, 404 Hill St., Oklahoma City, Oklahoma.

Vice President—Mrs. Floyd Keller, 418 N. W. 34th, Oklahoma City, Oklahoma.

Recording Secretary—Mrs. Forrest M. Lingenfelter, 3336 N. W. 20th, Oklahoma City, Oklahoma.

Corresponding Secretary—Mrs. Grider Penick, 904 N. E. 16th, Oklahoma City, Oklahoma.

Treasurer—Mrs. F. Maxey Cooper, 322 N. E. 16th, Oklahoma City, Oklahoma.

Pittsburg

President—Mrs. Benj. Kies, 2622 North Main, McAlester, Oklahoma.

Vice President—Mrs. L. S. Willour, 6th and South, McAlester, Oklahoma.

Secretary—Mrs. Walter Dell, 601 South Second, McAlester, Oklahoma.

Treasurer—Mrs. Floyd Bartheld, 425 E. Osage, McAlester, Oklahoma.

Pottawatomie

President—Mrs. Eugene Rice, 202 N. Beard, Shawnee, Oklahoma.

Vice President—Mrs. David Gillish, Indian Sanitarium, Shawnee, Oklahoma.

Secretary-Treasurer—Mrs. Clinton Gallaher, 626 N. Broadway, Shawnee, Oklahoma.

Tulsa

President—Mrs. Frank L. Flack, 1747 S. Florence, Tulsa, Oklahoma.

President-Elect—Mrs. James L. Miner, 3515 E. 12th, Tulsa, Oklahoma.

Vice President—Mrs. Thomas H. Davis, 1563 S. Yorktown, Tulsa, Oklahoma.

Recording Secretary—Mrs. Fred L. Bolton, 212 E. 27th, Tulsa, Oklahoma.

Corresponding Secretary—Mrs. G. R. Russell, 2727 S. Columbia Place, Tulsa, Oklahoma.

Treasurer—Mrs. Frank Stuart, 1203 S. Richmond, Tulsa, Oklahoma.

Woodward

President—Mrs. J. C. Duncan, Forgan, Oklahoma.

Vice President—Mrs. John L. Day, Supply, Oklahoma.

Secretary—Mrs. H. L. Wright, Supply, Oklahoma.

Treasurer—Mrs. Haskell Newman, Shattuck, Oklahoma.

OKLAHOMA County Auxiliary held their Annual Tea October 2, 1936, in the Venetian Room of the Young Women's Christian Association. About one hundred registered.

The Oklahoma City Clinical Society met October 26th, 27th, 28th and 29th, the Oklahoma County Auxiliary entertaining the wives of the visiting doctors.

What Every Woman Doesn't Know—How to Give Cod Liver Oil

Some authorities recommend that cod liver oil be given in the morning and at bedtime when the stomach is empty, while others prefer to give it after meals in order not to retard gastric secretion. If the mother will place the very young baby on her lap and hold the child's mouth open by gently pressing the cheeks together between her thumb and fingers while she administers the oil, all of it will be taken. The infant soon becomes accustomed to taking the oil without having its mouth held open. It is most important that the mother administer the oil in a matter-of-fact manner, without apology or expression of sympathy.

If given cold, cod liver oil has little taste, for the cold tends to paralyze momentarily the gustatory nerves. As any "taste" is largely a metallic one from the silver or silverplated spoon (particularly if the plating is worn), a glass spoon has an advantage.

On account of its higher potency in Vitamins A and D, Mead's Cod Liver Oil Fortified with Percomorph Liver Oil may be given in one-third the ordinary cod liver oil dosage, and is particularly desirable in cases of fat intolerance.

Injury of Hand: Clinical Lecture at Kansas City Session

Sumner L. Koch, Chicago (Journal A. M. A., Sept. 26, 1936), states that the arrest of hemorrhage, the treatment of shock, and the careful examination of the hand—not the wound—are the first steps in the care of an injured hand. The principles involved in the further treatment, as in the treatment of any compound injury, are care not to add injury to that which has already taken place, careful excision of hopelessly injured tissue, the use of a minimum amount of foreign material in the repair of the injured structures, closure of the open wound as soon as it can be done with safety, and rest until healing has taken place.

RADIO BROADCASTS

The American Medical Association and the National Broadcasting Company are presenting the second series of dramatized health broadcasts under the title "Your Health." The first broadcast in the new series, the thirty-second dramatized cooperative broadcast under the title "Your Health," was given October 13. The theme for 1936-1937 differs slightly from the topic in the first series, which was medical emergencies and how they are met. The new series is built around the central idea that "100,000 American physicians in great cities and tiny villages, who are members of the American Medical Association and of county and state medical societies, stand ready, day and night, to serve the American people in sickness and in health."

The program will go out on the Blue network instead of the Red, as originally announced. The announcement cards that were sent out when the program was planned for the Red network can be changed simply by substituting the word "Blue" for "Red" where it occurs. Stations in this section to which the program is available are as follows:

WSMB—New Orleans	WOAI—San Antonio
KVOO—Tulsa	WLW—Cincinnati
WFAA—Dallas	WENR—Chicago
WBAP—Fort Worth	WLS—Chicago
KTHS—Hot Springs	KWK—St. Louis
KTBS—Shreveport	WREN—Kansas City
KPRC—Houston	

The topics are announced monthly in advance in *Hygeia*, the *Health Magazine*, and three weeks in advance in each weekly issue of *The Journal of the American Medical Association*.

The time of the broadcast is Tuesday afternoon at 5 o'clock eastern standard time (4 o'clock central time, 3 o'clock mountain time).—*Journal A. M. A.*, October 24, 1936.

Glomus Tumor

Frank J. Jirka and Carlo S. Scuderi, Chicago (*Journal A. M. A.*, July 18, 1936), give the synonyms that have been used for glomus tumor as: angioma, angiosarcoma, Popoff tumors, tumeur glomique, tumeur du glomus neuromyo-arteriel, subcutaneous painful tubercle, angiomyoneurome, subcutaneous glomae tumor, angioma, perithelioma, false neuroma, glomangiomas and neuromyo-arterial glomus. Clinically a glomus tumor is characterized by a bluish discoloration of the skin, mounted on the top of a small cutaneous elevation. This area is very painful and, when irritated, produces a most excruciating radiation of pain up and down the extremity. More than fifty per cent of them, according to Bailey, are subungual, but almost every portion of the skin surface may be the seat of this lesion. The tumor is benign, and surgical removal produces a simple and complete cure. Including the case that the authors are presenting, the total number of authentic cases in the literature is seventy. Out of more than 74,000 surgical specimens from the Cook County Hospital, only one other case has been seen, and that in 1931, giving an approximate idea of the rarity of this lesion.

Vascular Collapse in Toxemia of Pregnancy

According to Fred L. Adair, Chicago, Arthur B. Hunt, Rochester, Minn., and Rupert E. Arnell, Chicago (*Journal A. M. A.*, Sept. 26, 1936), parturitional vascular collapse is a grave condition occurring typically in a rather small percentage of elderly

multiparas who have been afflicted with a progressively severe nephritis in succeeding pregnancies. The incidence of this condition in their clinic was 0.2 per cent of all deliveries and 2.55 per cent of all toxemic patients. The toxemia seems to be the most important etiologic factor, with delivery definitely exciting the appearance of vascular collapse. The blood pressure and general condition of cases of severe and chronic toxemia should be watched closely for twelve hours after delivery. Equipment and personnel should be ready for prompt and effective treatment in the event of the collapse of such a patient. The mortality is high, 15.49 per cent of seventy-one cases reported. The condition is an entity deserving of recognition and further study because of its gravity and because proper treatment should reduce the mortality appreciably. The most common pathologic lesion was a chronic glomerulonephritis. The liver lesions in these cases may merit further study. Proper use of hypertonic intravenous dextrose solution forms the basis for effecting recovery from the shock. A secondary partial anuria, associated with hypotension, may require management.

Oral Complications of Chronic Alcoholism: Significance, Recognition and Treatment

The case material presented by M. A. Blankenhorn and Tom D. Spies, Cincinnati (*Journal A. M. A.*, August 29, 1936), is a group of seventy-three alcoholic pellagrins and a series of one hundred and twenty-five cases of pellegra, ninety-five per cent of which were known as chronic alcoholic addicts. In the first series eighty-eight per cent had mouth lesions; in the second series, more than fifty per cent. Because of the prevalence of these lesions, which can easily be found if looked for, the authors suggest that any one addicted to alcohol who comes complaining of weight loss, poor appetite, or weakness should be so examined. The tongue, lips and buccal membranes, gums and palate are all concerned and the term stomatitis covers the condition generally. As to glossitis, the tongue becomes slightly swollen as evidenced at first by an increase in size and later by teeth impressions at the sides and tip. This swelling is almost always associated with bright red discoloration or exaggeration of the normal color. It is remarkable how little of coating there may be, even though the patient eats poorly. As the process extends, more and more of the tongue is involved and there is an increase in the intensity of the red discoloration and in the swelling. If treatment is not given, ulcers may appear along the sides and tip, rarely on top. Stomatitis follows a course similar to that of glossitis. The gums and mucous membranes become deeply reddened, swollen and tender. If left untreated, the process extends and often involves large areas, and here and there may appear ulceration of a mild form. The methods of treatment which the authors found to be most efficacious in the treatment of pellegra have likewise proved to be beneficial in treating the glossitis and stomatitis complicating chronic alcoholism. These methods consist in the administration of a well balanced, highly nutritious diet of at least four thousand calories a day supplemented by 25 gm. of yeast or liver extract three times a day. Wheat germ, administered in amounts of fifty gm. four times a day as a supplement to the diet, is also very beneficial. Response to such methods of treatment is dramatic; marked improvement occurs in from twenty-four to thirty-six hours, and within a few days the tongue and mucous membranes have changed from dark red to grayish pink and have returned to their normal size.

ABSTRACTS : REVIEWS : COMMENTS and CORRESPONDENCE

EYE, EAR, NOSE AND THROAT

Edited by Marvin D. Henley, M.D.
911 Medical Arts Building, Tulsa

Certain Aspects of the IntraCapsular Extraction of Cataract by Forceps. Arnold Knapp, M.D., New York. *Archives of Ophthalmology*, September, 1936.

Intracapsular extraction of the cataract is the ideal operation. The procedure is increasing in popularity. The technic is more difficult to attain and there is present the increased possibility of the vitreous prolapse. Knapp gives his classification of cataracts. He says the time to operate is when the anterior chamber is sufficiently deep and the patient cannot read or do his work. There seems to be no way known, at the present, to determine whether or not one will be able to dislocate the lens in the capsule successfully before the operation is actually done. The older the patient, the better the chance for successful intracapsular extraction. The different types of forceps used in this operation are discussed. The author prefers to use a well made Kalt forceps.

Elschnig's indications for intracapsular extraction are: immature, nuclear or cortical cataract; senile nuclear cataract; mature cataract; hypermature cataract with a large, brown nucleus (the anterior cortex having been absorbed), and cataract brunescens. His contra-indications are tumescent and morgagnian cataract. The views of other investigators on the indications and contra-indications of the intracapsular operation are discussed. As a whole they generally coincide. With these the author agrees with the addition that there are few contra-indications and that with proper precautions the intracapsular operation may be attempted in every case of senile cataract. Myopes of high degree have weak zonules, which facilitates the extraction. The hypermature cataract usually has a strong zonule. The experience of the author shows that the cataract in an eye with glaucoma is easily removed.

With some slight variation the following preliminary steps are used by most operators: the administration of sedatives, the induction of akinesia, suture of the superior rectus muscle, deep intraocular injection, section with a conjunctival flap or with Kuhnt's conjunctival keratoplasty and conjunctival suture and iridectomy, complete or partial. Operators differ as to where is the correct point to grasp the capsule of the lens. The author, along with Elschnig, Arruga and Blaskovics prefers the lower half of the anterior surface as the grasping point. In order to dislocate the lens it is necessary to make it swing about a transverse axis. Counter pressure is made from below and the lens is moved in various directions until ready for expression. Expression may be accomplished either by traction or pressure. Knapp releases the forceps from the capsule after the lens is dislocated and finds that the lens readily tumbles and is easily extracted by the Smith technic.

The maneuver of tumbling appears not to be generally practiced, probably because its technic is not well understood. The author's objection to traction is the hazard of torn capsules and the greater loss of vitreous.

In closing the author urges conservatism. If after going through the routine procedure, the zonular fibres do not rupture with a reasonable amount of manipulation, then the attempt at an intracapsular expression should be abandoned, and an extracapsular operation done.

The Clinical Significance of Compensatory Granular Pharyngitis. Harold I. Lillie, M.D., Rochester, Minn. *Archives of Otolaryngology*, September, 1936.

Lillie disagrees with the prevalent idea that unpleasant symptoms referable to the pharynx are attributable to the secondary effect of disease of the paranasal sinuses.

Some theories of the tonsil's function are: (1) that they furnish protection against bacterial invasion, (2) that they function as glands of internal secretion, (3) that they are organs in which blood cells are formed, (4) that they are exposed lymph nodes, probably with a function of elimination or excretion and (5) that they produce antibodies. Lillie thinks the real function of the tonsils may include several of these theories.

The embryology of the adenoid, pharyngeal and lingual tonsil and the palatine or faucial tonsil is reviewed. The adenoid, pharyngeal and lingual tonsillar tissues develop from the submucous implantation of lymphocytes. The palatine or faucial tonsil develops from the mesoderm of the second pharyngeal pouch. Of these mentioned the faucial tonsil is the only one that can be completely removed. After their removal sometimes the lateral pharyngeal bands and the tonsillar plaque in the pharyngeal wall increase in size. This produces a sense of discomfort to the patient. The author regards this condition as a compensatory granular pharyngitis, i. e., an effort on the part of nature to supply tissue which will probably perform the unknown function of the removed faucial tonsils.

The histology and pathology is discussed. Congested pharyngeal membrane resulting in a disturbed function produce some of the following symptoms: a constant sore throat, aching throat, the sensation of a foreign body in the throat, hawking, gagging and paroxysms of coughing attempting to remove clumps of mucus in the morning, the frequent desire to swallow, the interference with voice in public speakers, the patient becomes "pharynx conscious."

Many times one should be able to forecast this sequelae of removal of tonsils and adenoids. The author uses the term "lymphatism" to describe this assembly of patients. Here are found the red-headed or light-complexioned, those with thin skins and sensitive mucous membranes, those subject to frequent attacks of upper respiratory tract infections, those below par physically, those hav-

ing an unbalanced diet and poor hygienic background.

A typical throat is described. The tonsils are large, soft and red, containing debris or caseous plugs; cervical nodes palpable; lateral pharyngeal bands enlarged and red—granular in appearance—superficially dry, extending up toward the fossa of Rosenmüller; granular pharynx—possible follicular formation with caseous plugs or submucous abscesses. He advises that if this type of patient needs to have the faucial tonsils removed, because of many attacks of follicular tonsillitis or if as a result of the chronic infection there is evidence of a focal infection in the body, it is better to medicate the patient thoroughly before operation in an attempt to get the pharyngeal condition under control. This secondary granular pharyngitis sometimes assumes significance from the basal principle of focal infection.

Various forms of treatment that have been used are mentioned, including topical application of numerous drugs, sprays and gargles, roentgen rays, diathermy and electro-coagulation and surgical removal. The results obtained have been universally disappointing. The author prefers the ingestion of iodine in some form. In adults he uses ethyl di-iodobromide in tablet form. In children syrup of hydriodic acid may be used.

Some Remarks on the Surgical Treatment of Peritonsillar Inflammations. Reidar Schroeder, Copenhagen. *The Journal of Laryngology and Otolaryngology*, September, 1936.

Schroeder states that ordinarily peritonsillar abscess is a benign, though painful disease, but that when complications occur, it rapidly becomes dangerous, justifying radical surgical treatment.

Tonsillectomy as a treatment for peritonsillar abscess is still a debatable question. The danger of this treatment is shown by the fact that Leicher, Haardt, Hayman and Soderberg have reported fatal complications after tonsillectomy for acute peritonsillitis.

Levinger, Stenger and Canuyt have proposed separation of the upper pole of the tonsil, and partial tonsillectomy, to lessen the precariousness of the surgery. Another method of theirs is that of making a large opening to the tonsillar bed through the anterior faucial pillar.

The author's experience leads him to believe that most of the abscesses are located behind the upper pole of the tonsil and are easily drained well by opening at the top of the anterior faucial pillar. The abscess located behind the lower half of the tonsil is the most dangerous as then such complications as thrombosis of the internal jugular vein, septic emboli and other fatalities may occur. The simple incision through the anterior faucial pillar in such cases is not sufficient and further surgery becomes inevitable.

In the usual peritonsillar abscess the simple incision, as mentioned above, is made and the cavity kept open, daily, until all the pus has been drained. He mentions the fact that in several instances a total tonsillectomy has been performed a few days after the simple incision for the abscess was made, without untoward sequelae. Partial or total tonsillectomy "à chaud" is done in cases in which it is suspected that the detachment is insufficient for proper drainage as in a very low or parapharyngeal abscess.

Detachment of the upper part of the tonsil is used when no pus appears even after repeated incisions, where the swelling of the throat is unchanged or increased, the temperature still high, and the general condition of the patient is not satisfactory, where oedema of the glottis occurs,

swelling of the neck, and where there is evidence of a general infection such as albuminuria and haematuria.

The simple incision is made without anaesthesia; injection of novocain-adrenalin solution is used for the tonsillar detachment. The pharyngeal plexus is anesthetized, the site of injection being above and medial to the last molar tooth to a depth of one and one-half to two cm. This eliminates all trismus.

One hundred and forty-eight cases are reported; ninety-two were treated by peritonsillar incision only; fifty-six were treated by further operation. The reasons for further surgical treatment were: in fifteen cases no pus appeared after repeated incisions and the temperature remained high; in thirteen cases the abscess was followed by nephritis; in eleven cases oedema of the glottis occurred; in seventeen cases parapharyngeal abscess followed; in two cases there was a thrombophlebitis of the internal jugular vein. His operative technique in forty-three cases was detachment of the upper tonsillar pole, in five cases on both sides; in ten cases total and in three cases partial tonsillectomy "à chaud."

According to the author following the technique he outlines, the bleeding is less and under better control when detachment of the tonsil is practiced; also fewer lymphatic vessels are opened.

His closing thought is the unusual incidence of the complication of a parapharyngeal abscess following a peritonsillar inflammation.

The Relationship of Asthma to Nasal Pathology. Irving Muskat, M.D., Chicago. *The Eye, Ear, Nose and Throat Monthly*, October, 1936.

This relationship has been a subject for controversy many years. No one seems to question but what there is a close association between the two but what it is few agree upon. In a review of the experiences of the clinician, the physiologist and the pathologist, one finds quite an array of methods in practice for the control and treatment of this condition. Allergy in relationship to nasal pathology is first discussed. This brings up the clinical and histopathologic study of vasomotor or hyperaesthetic rhinitis, hay-fever, bronchial asthma, catarrhal rhinitis and sinusitis, nasal and paranasal polypi and edema, and hyperplastic sinus disease. He says these conditions only signify various stages of the same fundamental disease—hyperaesthetic rhinitis representing the early stage and hyperplastic sinusitis or polyposis the advanced stage.

There are many theories advanced but the author states that we do not know what allergy or anaphylaxis is. Because it is thought that specific antigen fails to produce enough anti-antigens or anti-amino acids to render the foreign protein harmless, some, attempt to identify this foreign protein and then immunize the individual by injections or withdrawal of the offending protein or both. When the subject of bacterial allergy is discussed the issue becomes yet more confused. Other factors such as heat, cold, friction, light, psychic status, and others we do not yet realize enter into this debatable subject.

Horton and Brown found that the constitutional reactions produced by cold were the same to those of histamine, and consequently decided that the physical as cold might break down certain proteins in the body and liberate the histamine-like bodies.

Much time and effort has been spent in trying to locate an etiologic factor in the nose to account for bronchial asthma. Bacterial infection, non-bacterial allergy, and the neurogenic theories have

been advanced and used, each more or less successfully. The author says "the trouble in coming to a sane fundamental mode of thinking, however, was because the above facts as regards the mechanism of allergy has been ignored in the effort to prove one point for everything."

If there is a definite nasal pathology in the presence of the bronchial asthma, it is obvious that the disease must be eliminated. He reminds us that an allergic nose at one examination may appear wet and boggy, with sinuses dark on transillumination, the lipiodine injection indicating polyposis and on a subsequent examination may appear practically normal. Surgery in such a case is surely contra-indicated. It should be kept under observation for some time and carefully studied. If there is polypoid tissue present then adequate surgery must be done to bring about proper aeration and drainage.

A Caldwell Luc operation is the only one that will bring relief if in the antrum there is a chronic purulent hyperplastic disease.

Different men claim success in the care of asthma with a variety of drugs and treatments. Some of these as mentioned in this article are: tuberculin, calcium, sodium iodide, thyroid, vaccines, peptone, diathermia and cauterization of the nasal mucous membrane.

Chevalier Jackson is quoted: "All who wheeze have not asthma." Bronchiectasis with a chronic purulent and polypoid sinus disease may be the cause.

In closing the author states: "that the diagnosis and treatment of asthma with its relationship to nose and throat conditions depends on the intelligent interpretation of the history of the case, the course of the disease, the findings without the dogmatic, narrow, single method of attack."

SURGERY AND GYNECOLOGY

Abstracts, Reviews and Comments from

LeRoy Long Clinic

714 Medical Arts Building, Oklahoma City

Hyperthyroidism Associated With Malignant Tumors of the Thyroid Gland. George Crile, Jr. Surgery, Gynecology and Obstetrics, June, 1936.

In two hundred and forty-nine cases of malignant tumors of the thyroid gland seen at Cleveland Clinic the first impression in about four per cent of the cases was that a hyperthyroidism was present. However, on closer study, in only two of these instances was there any indication of hyperthyroidism as based on such objective criteria as persistent tachycardia or elevation of the basal metabolic rate in the presence of a history and physical findings consistent with hyperthyroidism. The author feels that the apparent hyperthyroidism in these two cases and in similar cases that have been reported by others were the result of one of two factors: (a) changes incident to an increase of the patient's vascular bed; or (b) stimulation of hyperthyroidism by some systemic disturbance incident to the presence of enlarged malignant tumor or its metastases.

He gives a case history illustrative of the theory that stimulation of hyperthyroidism may be caused by an increase of the vascular bed. A malignant adenoma of the thyroid had resulted in a huge pulsating metastasis to the ilium. Although a forceful tachycardia, an elevated metabolic rate, and a history consistent with that found in cases with hyperthyroidism were all present, in all probability he thinks the patient did not have hyperthyroidism, because the entire picture could be explained

on the basis of increased circulation through the large vascular bed of the metastatic tumor.

A similar condition existed in a woman fifty-three years of age who had a hypernephroma of the left kidney. It was concluded that here again the increase of the vascular bed caused elevation of the basal metabolic rate, the persistent tachycardia and the increased pulse pressure.

There is great diversion of opinion as to the relative frequency of hyperthyroidism with malignant tumor of the thyroid. It is the author's belief that misinterpretation of symptoms suggestive of hyperthyroidism, or differences in the pathological interpretation of tissues removed at operation are responsible for this diversion of opinion. He then proceeds to point out some mechanisms by which a malignant tumor of the thyroid gland can produce a clinical picture which closely simulates that of hyperthyroidism.

The type of tumor which attains sufficient size and vascularity to be able to produce systemic effects by over-taxing the circulatory mechanism as in the cases reported must be relatively rare. It is nevertheless quite probable that a number of patients, in whom large vascular malignant thyroid tumors and a secondary tachycardia were present have been thought to have been suffering from hyperthyroidism and have been reported in the literature as cases of hyperthyroidism associated with malignant thyroid tumors.

The other type of case in which the presence of a malignant tumor is apt to result in a clinical picture that can be confused with hyperthyroidism is seen when there are extensive systemic manifestations of malignant disease. This can be found in cases where malignancy involves organs other than the thyroid gland. It is not surprising that when the malignancy happens to involve the thyroid gland that hyperthyroidism is even more strongly suggested.

The author believes that great care must be exercised in making a diagnosis of hyperthyroidism in the presence of generalized metastasis.

The basal metabolic rate in a recent series of thirty-three cases of malignant adenomas and of papillary carcinomas of the thyroid gland average plus 0.3 per cent. These two types of neoplasm are the most highly differentiated forms of thyroid malignancy and hence probably represent the types of tumor most likely to show functional activity. Yet in only three cases was the basal metabolic rate above plus sixteen per cent. One of these three patients had an elevation of temperature associated with extensive pulmonary metastasis. The second patient suffered from dyspnoea secondary to tracheal compression, the third was a case herein reported in which a large pulsating metastatic tumor was present in the ilium. In this series of malignant tumors of the thyroid gland there was no consistent deviation from the normal basal metabolic rate.

In conclusion the author states that in two hundred and forty nine cases of malignant tumors of the thyroid gland, there was not a single instance of the indisputable co-existence of hyperthyroidism. The rareness of the association of these two conditions suggests that this association is largely co-incidental, the two diseases probably bearing no etiological relationship to each other. It must follow, therefore, that the diagnosis of hyperthyroidism should be made with caution in the presence of a thyroid gland which has the characteristics of a malignant tumor, and that, conversely, the diagnosis of malignancy should be made with equal hesitancy in cases in which there is unequivocal evidence of active hyperthyroidism.

LeRoy D. Long.

Diseases of the Thyroid Gland. A Correlation of Clinical and Pathological Material. By Frank Glenn and Cuyler Y. Hauch, New York. *The American Journal of Surgery*, October, 1936, Page 12.

The increase in recent years in the number of patients operated upon for goiter, has enlarged our knowledge of the clinical manifestations of thyroid disease and has made available for study a large amount of pathological material. Separately and on the basis of their peculiar experience and observations, the clinicians and pathologists have devised classifications of thyroid disease. These different types of classification confuse the student encountering the problems of goiter.

In 1931 the Committee on Nomenclature and Classification of Disease grouped all diseases of the thyroid, exclusive of malignant lesions, inflammation and the rarer types of disturbances, under four headings: non-toxic diffuse goiter, toxic diffuse goiter, toxic nodular goiter and non-toxic nodular goiter. The authors in reviewing the clinical findings in over three hundred cases of thyroid disease and studying the glands removed at operation from these cases, found a definite relationship between the clinical picture and the pathological changes in the thyroid gland. The article sets forth some of the facts determined by this study for the purpose of grouping clinical and pathological data under the above four headings and thereby presenting a simple, concise conception of thyroid disease.

The classification of nodular goiter is simplified by emphasizing the nature of the individual nodule.

A differentiation is made between true adenomas and the so-called "fetal" adenomas.

Under each heading the authors give the clinical picture, the gross examination of the specimen, and the microscopic examination. Many previous attempts have been made to thus classify thyroid disease but many students of the disease, particularly clinicians, have been skeptical as to the possibility of thus correlating the clinical and pathological material. At any rate this is a commendable effort and contributes to our understanding of the various forms of goiter.

LeRoy D. Long.

Morphine as an Aid in Diagnosing Acute Abdominal Affections. By Harry A. Singer, Chicago, Ill. *The American Journal of Surgery*, October, 1936, Page 5.

The author says that it is universally taught that morphine should not be administered to a patient with an acute abdominal affection until the diagnosis has been established or at least until a decision as to whether or not to operate has been reached. The objection to the drug during the diagnostic period is that the narcotic "masks" the clinical picture. As a matter of fact the only sign, symptom or laboratory test which is affected by the morphine is the pain and its related manifestations, principally rigidity and hyperesthesia.

By virtue of the fact that the alkaloid relieves or moderates pain and removes thereby, in part at least, the abdominal wall resistance and the hyperesthesia, morphine is often most helpful in the diagnosis of acute abdominal affections. When the suffering of the patient is great, a trustworthy and adequate history cannot be obtained without first employing a narcotic to assuage the agony. When the physical signs are difficult to elicit or are equivocal the administration of morphine permits a much more satisfactory examination. After its administration a small or moderate size mass in the presence of diffuse rigidity accompanied by hyperesthesia can be made out; the point of localized tenderness can be more accurately determined;

that portion of the abdominal wall which is most rigid can be determined; with relief of the spontaneous pain the hyperesthesia is more or less removed permitting the examiner to determine the true degree of tenderness which is proportionate, other things being equal, to the severity of the inflammation present.

A disadvantage of the method is admitted by the author to be danger that a patient may be deceived by relief from pain. For this reason he thinks that care should be taken to apprise the patient of the selective effect of morphine on the pain and of its failure to influence the course of the disease. Another objection which might be raised against the use of morphine in the pre-diagnostic period is in the cases of intestinal obstruction.

The procedure of the author is as follows: "The ordinary case is handled in the customary manner. If, however, the patient is unable to cooperate in the taking of the history or in the making of the physical examination on account of the severity of the pain, a sketchy history is obtained and a preliminary examination made and the observations recorded. Morphine grains 1/4, or its equivalent, dilaudid grains 1/20, is injected INTRAVENOUSLY. The effect is very prompt and striking. An adequate history is now obtained and a complete, careful physical examination can be done. Observations made before and after morphine can then be compared."

In addition to aiding the examiner in arriving at a correct interpretation of symptoms, morphine administered early in the diagnosis period spares the patient the unnecessary suffering and renders him a better operative risk. Morphine is conceded to be one of the most effective therapeutic agents in counteracting the effects of "shock," hemorrhage and also peritonitis. From what has been said it is quite clear that the author has not deprived himself and his patients with acute abdominal affections the benefits of morphine and in the words of Moynihan, "Many of us have been frightened of the drug, quite needlessly, for properly used its value is beyond question."

LeRoy D. Long.

UTERINE PROLAPSE

Methods of Treatment

The four following articles appeared in *The American Journal of Surgery*, Gynecological Symposium Issue, September, 1936.

Vaginal Hysterectomy, Clamp Method, for Uterine Prolapse. By J. W. Kennedy, Philadelphia. Page 428.

The clamp method for doing vaginal hysterectomy is fully described and a great number of excellent illustrations of the procedure are shown.

Kennedy advocates this method on account of the great amount of retraction and contraction of all the sustaining structures of the uterus and cervix incident to the procedure. In the following quotation from the summary of the article will be his objection to the interposition operations and to all suture methods of vaginal hysterectomy, together with his ideas of the prime requisites essential in any procedure for treatment of uterine prolapse.

"We further contend that no procedure which fails to elevate the bladder to normal position, will relieve the symptoms of a prolapsed uterus.

"That all interposition operations leave a questionable organ from the standpoint of malignancy and do not sufficiently elevate the bladder in the presence of the prolapsed position of the uterus.

"The remaining uterus or any portion of it only

adds its weight to the congested and prolapsing vaginal fornix.

"That any suture method of vaginal hysterectomy shortens the vaginal canal, whereas, vaginal hysterectomy, clamp method, lengthens the same.

"The suturing of the sustaining ligaments of the uterus prevents the contraction and retraction of these structures which is the prime factor of success in vaginal hysterectomy, clamp method, for prolapse of the uterus.

"Vaginal hysterectomy with clamps can be performed in one-quarter the time that the suture method requires.

"In prolapse of the uterus with a moderate degree of cystocele, the cystocele will be corrected without additional surgery when the uterus is removed by the clamps.

"We advocate vaginal hysterectomy, clamp method, for practically all dysfunction of the sterile and prolapsed uterus after the age of forty years."

He reports that they have had no fatalities from post-operative hemorrhage after this method of operation in the Joseph Price Hospital. Though there is no statistical presentation, he reports their results as excellent.

* * * *

Le Fort Operation for Uterine Prolapse. By Fred L. Adair and Laura DeSef, Chicago. Page 459.

This operation is a partial colpocleisis and consists of a median obliteration of the vagina leaving two small lateral canals.

It is particularly valuable in patients having recurrent prolapse with history of one or more operations prior to examination. It is also frequently of value in older women who are apt to present medical complications which increase the surgical risk.

The limitations of this operation are well given in the following quotation:

"The operation is obviously limited in its scope and can be used only in women well beyond the menopause. Since it obliterates the vagina except for two small lateral canals, it precludes the possibility of further function of this structure and its use is, consequently, confined to those women who have passed the menopause, to those who are widows and to those to whom active sexual life is of no further importance."

The technic of the operation is briefly described and reference made to a more elaborate description in the August, 1936, issue of the American Journal of Obstetrics and Gynecology.

These authors report forty-five cases with "ultimate satisfactory results in 95.6 per cent of the patients."

(Note—In addition to the limitations given, one of the objectionable features of the operation is the fact that the cervical canal and cervix are entirely buried and cannot be visualized.)

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Treatment of Prolapse of Uterus by the Manchester-Fothergill Operation. By Charles A. Gordon, Brooklyn, N. Y., Page 464.

The essential feature of this operation is the approximation of the parametrial tissue in front of the cervix together with anterior colporrhaphy with or without amputation of the cervix. Naturally a colpoperineorrhaphy is also employed.

Though there is a rather long discussion of the fundamental anatomical variations in prolapse of the uterus and of the principles involved in this

operation for its correction, the subject is epitomized in one paragraph by the authors.

"Anatomical discussions have needlessly complicated the subject, for clinical evidence is strong that shortening by approximation of the parametrial tissue, whatever it may be called, will stabilize the cervix at a high level."

The technic of the operation is briefly given together with the principal features of pre-operative and post-operative care.

"The advantages of the procedure are numerous. "Selection of the operation does not depend upon the age of the patient. Palliative treatment of prolapse during the reproductive period is unnecessary, as a fairly large number of women have been carried through pregnancy, labor and the puerperium without serious pathology or dystocia referable to the operation; in this period, however, best results are obtained when the cervix has not been amputated. Poor risks need not be rejected, nor patients advanced in years, since the operation leads itself admirably to the use of local anesthesia. The menstrual function is not disturbed, provided the cervical canal has been dilated and sutures carefully placed about its opening when part of the cervix has been amputated. Any type or degree of prolapse, irrespective of the size of the protrusion, may be cured, in fact the operation is easiest when prolapse is complete. A great advantage of the operation is the slight risk. Shaw, in 2293 cases over a period of twenty-seven years, has had but ten deaths, a mortality of 0.43 per cent."

The results of the operation can be ascertained as follows: "W. Fletcher Shaw, W. E. Fothergill, Alfred Gough, Herzfeld and Tod, and, in this country, Maier and Thudium and Gordon have reported large series of cases with unusually satisfactory end results of better than ninety-five per cent cures."

* * * *

Vaginal Hysterectomy in Cure of Prolapsus Uteri. By N. Spoot Heaney, Chicago, Ill. Page 471.

The essential features of this operation are the vaginal removal of the uterus and suture of the two stumps of broad ligament together beneath the bladder so that the bladder rests upon the posterior surface of the joined broad ligaments. Naturally, a colpoperineoplasty is performed in conjunction with it.

The technic of the operation is described in detail with special emphasis given to the prevention of recurrence of cystocele and rectocele.

A statistical survey of results is not given.

COMMENT: The interposition operation is not described in this series of operations. It has objectionable features as do all of the other procedures described, but there is no question that it has distinct advantages in particular individual patients and if the cases are properly selected and the procedure properly done the end results are excellent.

In the minor degrees of uterine prolapse before the menopause, uterine suspension and colpoperineoplasty have a distinct field of usefulness. However, in all the more pronounced cases of uterine prolapse before the menopause, it is my opinion that the Manchester-Fothergill operation is a far superior procedure.

I have employed all of these operative procedures in the treatment of uterine prolapse except the clamp method vaginal hysterectomy. They all have definitely favorable features and they all have certain objections and limitations. In the proper treatment of all cases of uterine prolapse there is a distinct place for each with careful adaptation of the procedure to the individual patient. It would seem evident that a surgeon operating upon uterine

prolapse should be qualified to choose from this entire group of different operative procedures.

Wendell Long.

Benign and Malignant Polyps of the Cervix Uteri.
By Clyde J. Geiger, Chicago. *The American Journal of Obstetrics and Gynecology*, September, 1936, Page 465.

In reading the literature the author found the incidence of primary carcinoma of a cervical polyp very rare. From January, 1932, through December, 1935, at the Cook County Hospital Tumor Clinic there were thirty-two mucous polyps of the cervix in one of which there was a primary carcinoma. These thirty-two cases of mucous polyp were found among two thousand and forty-eight gynecological cases admitted to the clinic.

In discussing this short paper, Dr. Henry Schmitz called attention to the fact that polyps may assume peculiar cell formation. "It may be impossible to determine the primary origin of the cells or to render a definite diagnosis, especially with regard to malignancy."

COMMENT: The relative infrequency of primary carcinoma in cervical polyp is well known. It is an interesting fact that the incidence of cervical polyp was so low in this large group of gynecological cases. It must be presumed that most of the cervical polyps were treated elsewhere in the county hospital.

While primary carcinoma is rarely found in a cervical polyp, none the less it occurs frequently enough that removal of a cervical polyp without competent microscopic examination is an indefensible action.

In these cases of which Dr. Schmitz talks where-in there are peculiar cell formations and it is not possible to render a definite diagnosis as regard malignancy, the course of medical attention to an individual patient is extremely important. Prior to any radical measures one or more additional pathologists should carefully examine the specimen and the surgeon should consult with them.

Wendell Long.

PLASTIC SURGERY

Edited by GEORGE H. KIMBALL, M.D., F.A.C.S.
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Technical Details in Skin Grafting. S. G. & O., September, 1936. J. Herbert Conway, M.D., New York.

The author describes two methods of closing the donor site of small, deep skin grafts. These have been commonly called pinch grafts. He points out that the application of this method has been carefully worked out. However, little attention has been paid to the area from which the grafts are taken. Some of the objections to pinch grafts are as follows:

1. The formation of multiple small keloids at the site from which the grafts are taken.
2. The cosmetic disfiguration caused by pigmentation or unsightly pallor of the skin at the points of excision of the grafts.
3. The occasional infection of the areas from which the grafts are taken. This is usually due either to direct contamination from the granulating wound at the time of the operative procedure or later contamination during dressing. Often it is almost unavoidable because of the proximity of the

granulating wound to the area from which the grafts are cut.

4. The slow rate of epithelialization of the small areas of denuded skin seen often in diabetic subjects, debilitated patients, etc. It is frequently the case that the area grafted is completely epithelialized before the site from which the grafts have been cut has healed.

The author describes two methods by which the above objections are in the main overcome.

1. This consists of primary closure of the deep oval or circular skin defect by a single suture of fine silk. If the grafts are cut in linear succession then the healed suture line shows a slightly irregular linear scar. This method is particularly applicable to a case where only a few grafts are needed.

2. This method consists of excising the area from which the grafts are taken by an elliptical incision. The incision includes the sub-cutaneous fat which is excised and discarded. The flaps are then undermined and the elliptical area closed by suture.

COMMENT: There is no argument that the objections raised to the pinch grafts often obtain. However, this type of graft is not used except when a split graft cannot be used or secured.

The methods of avoiding keloids and disfiguring marks following pinch grafts are to be recommended in some cases.

A Study of Ulcerations of the Lower Extremity and Their Repair With Thick Split Skin Grafts. James Barrett Brown, M.D., F.A.C.S., Louis T. Byars, M.D., and Vilray P. Blair, M.D., F.A.C.S., St. Louis, Mo. S. G. & O., September, 1936.

In a group of sixty-six patients sent into the hospital for repair of ulceration of the lower extremity, we have made a study of the cause, duration, and extent of the ulcers, and of the microscopic sections of the ulcers and the surrounding scar of epithelium. From these studies we have gained information that we think may be used to fortify our main premise of treatment, viz., that where a large amount of skin has been lost, the best repair will be by the replacement of normal skin.

CAUSES: Many different causes of ulceration have been found but there is a surprisingly small percentage of pure varicose ulcers. This may be taken as an indication of good results obtained (by other workers in the Washington University Surgery Dispensary) in the varicose cases by conservative methods. (See tabulation of causes.)

DURATION: The longest duration of continuous ulceration was twenty years, in a woman who had dressed three huge open areas every day over this entire period. The cause, in this patient, was thought to be luetic, ingrafted on a varicose basis, or vice versa. Another interesting duration was of seventeen months following a loss of practically all the skin of the legs in a gasoline fire and during which time the patient had spent twelve hundred dollars on a single patent ointment.

SURFACE EXTENT AND DEPTH OF ULCERATION: SPONTANEOUS EPITHELIALIZATION

If there is complete circular loss of skin, spontaneous epithelialization is very greatly retarded, and there may be a complete lack of growth from the lower epithelial edge. If just a little bridge of normal skin is left through the full length of the leg, spontaneous epithelialization may occur very rapidly and occasionally give a permanent bearing surface. There is, however, a tremendous individual variation in the rate and possible extent of surface healing in these patients.

Four patients in this group had complete circular loss of skin in both legs; two had similar loss in one leg. Two of these died before any spontaneous epithelialization could be obtained and before they could be gotten in condition for operation, except for small deep grafting. The others are well.

Deep ulceration, involving tendons and areas where dead bone is exposed, occurring mainly along the tibia and about the ankle, cannot be expected to heal; furthermore, repairs cannot be successful until the necrosed tendons and bone have completely separated.

There is a group of patients who never produce any real granulations on the ulcer bed, but continue to have a dirty gray or yellowish glistening base. We have been unable to overcome this in several patients but have found that this base can be removed and successful grafting done. More troublesome is the lesion that has developed an excessively thick, dense scar, the removal of which carries one down to bone or tendon; and perhaps still more hazardous for a successful repair is the occasional lesion that has a deep edema under the ulcer base, suggesting possibly the beginning of an elephantiasis.

Spontaneous healing of permanence cannot be expected in ulcers due to arterial disease or to excessive radiation.

Table of Causes and Duration of Ulceration:

Total Cases	66
Burns	20
Open ulceration present from one to two years, the time since the burn as high as thirty, thirty-two, thirty-three, thirty-five, and fifty-five years.	
Varicosities	6
One of these patients, with complication of syphilis, had huge open ulcers that she dressed every day for twenty years. One man had ulcers open for the greater part of twenty years.	
Hemolytic streptococcus infection	4
Osteomyelitis	8
Ulcers of eight, ten and thirteen years duration.	
Trauma	5
One ulcer, open thirteen years.	
Syphilis	1
See varicosities.	
Arterial vascular disease	3
Exact type of lesion undetermined in all three patients, two ulcers open for ten years.	
Compound fracture	4
One ulcer open for eleven years.	
Radium	1
X-Ray	2
Diabetic arteriosclerosis	1
Ulcer open and closed for forty-four years.	
Pressure necrosis (cast)	1
Irritative (chemical)	2
Rapid and widespread destruction of skin following use of patent ointments, presumably containing phenol.	
Malignancy, post-operative	1
Phlebitis	2
One ulcer open thirteen years.	
Benign tumors	2
Factitious	1
Supposedly eighteen years duration following injury.	
Unclassified	2

POSSIBLE FAILURE OF PERMANENT HEALING FROM SPONTANEOUS EPITHELIALIZATION OVER LARGE AREAS

The "scar" epithelium that covers these defects spontaneously under conservative treatment may give a permanent bearing surface in some instances, especially if the area is not too large, but it is not normal skin and can be easily traumatized with recurrent ulceration and very slow healing resulting.

This epithelium creeps across the scar base, does not contain hair glands and does not have normal derma to attach it to the base. Slight infection or trauma may cause widespread denudation of this thin, flat "scar" epithelial growth.

This type of healing, especially over the tibia and about the ankle may be a source of great annoyance to the patient, and, in many instances, we have recommended its replacement with normal skin by the use of free thick split skin grafts. Voluntary statements have been made several times by patients that later injury to these grafts was followed by normal healing.

There may be fairly well maintained surface healing with this "scar" epithelium and yet there may be a general tightness and even constriction of the tissues. In this event the area can be made much more comfortable by simply opening it, allowing relaxation and covering the resultant defect with thick split grafts.

Where there are wide areas of "scar" epithelium the result of spontaneous healing, it has been recognized and explained to these patients that before they are free of their trouble, the skin of the entire leg may have to be replaced. This, of course, occurs most often in the varicose cases and it is important to follow these patients closely if healing is to be maintained. It is also true that the areas surrounding the ulcer improve, at least temporarily, when the ulcer is repaired.

REPAIR OF LEG ULCERS WITH THICK SPLIT GRAFTS

The foregoing observations may be taken as vindication of our original premise—that large surface losses are best repaired with normal skin. In fifty-nine cases we have elected to excise the ulcer and cover the defect with free thick split skin grafts, for the following reasons: (a) They can be obtained in large amounts rapidly and easily. In one patient one hundred and twenty-eight square inches were covered at one time and one graft was obtained eighteen by five inches, and in another patient almost the entire lower leg was covered at one operation. (b) They may be gotten of suitable thickness to give normal appearance and a normal bearing surface that will withstand transplantation into a contaminated field. (c) Because of general ease of handling, large areas including unstable surrounding scar epithelium are more apt to be grafted. This is especially important where an entire leg may have to be covered before the patient is through. (d) The post-operative care both for the patient and for the surgeon is relatively easy. (e) Any secondary operations can be done early. (f) The use of any type of full thickness graft is not thought necessary.

Qualifications of this choice of thick split grafts may, of course, be made: (1) Pinch grafts or small deep grafts may advantageously be used without hospitalization in some instances, or in patients unsuited for any other type of repair. These were used once in this series after failure of a split graft because of a mistake in technique. (2) Double pedicle or sliding flaps may be used, in osteomyelitis cases, to insure a thicker covering over the tibia. (3) Individual preference of the surgeon for some type of full thickness graft which, if suc-

cessful, will of course, give as satisfactory a result as the thick split graft.

PRELIMINARY PREPARATION OF THE PATIENT

It is unnecessary to mention that any causative factors should be controlled if possible. Improvement in circulation and control of infection are probably the most important early steps. If the patient comes in with dirty wound and surrounding area, he is usually given soap, water, and brush and asked to do the best he can in the bathtub. Ointments or cold cream may be used if necessary to loosen crusts and heavy keratin deposits, and general surface debridement is carried out. Continual wet dressings either of saline or Dakin's solution are then kept on the area, with the patient in bed and the leg elevated most of the time; many different antiseptics have been used and it is perhaps best to use some mild application at the time of each dressing, such as five per cent gentian violet or other of individual choice. Very fine mesh bandage gauze or old linen placed next to the wound is of greater benefit than the usual coarse mesh dressing gauze. In the extensive areas and in badly infected patients, the continuous saline bath is used for one to three hours a day.

Elastic pressure bandages are frequently used and this pressure may improve the entire aspect of the leg within twenty-four to forty-eight hours. These preliminary pressure dressings may even be substituted for bed rest over several days' time.

LOCAL CONTRA-INDICATIONS TO OPERATION

No patient is operated on with any evidence of cellulitis or edema anywhere, and the patients have been kept in bed as long as three weeks before operation. It is, of course, hoped that the ulcer might be sterile but it is doubtful if one of any size is ever entirely free of contamination. Routine pre-operative cultures are not done, the readiness of the wound for grafting being judged by its appearance, but, if the lowly pyocyanus is known to be present, it is best to delay operation until this is controlled, for it is extremely harmful to the growth of free skin grafts. Up to the present time we have found that bacillus pyocyanus can best be controlled by frequent painting with strong solutions of the dyes (gentian violet and methylene blue) or the proprietary mercurials, plus the copious use of soap and water. The standard use of hydrogen peroxide and acetic acid has been of little value in our hands. It is also very important that any active ringworm infection be controlled.

PREPARATION OF ULCER AREA AND APPLICATION OF GRAFT AND DRESSING

Local preparation is done with soap, water, ether, and two per cent iodine. The ulcer edge and base is excised down to a suitable bleeding surface, by undercutting (never scraping) with a knife, care being used to not expose bone or tendon; and adjacent thin "scar" epithelium is removed with the knife and the resultant defect is bound firmly with saline gauze after any necessary bleeders have been tied with very fine silk.

Thick split grafts of one-third to three-fourths the thickness of the skin are obtained, usually with the aid of the suction retractor, from the same or opposite thigh, if possible in one piece large enough to cover the whole defect.

The graft is applied directly to the base, slightly overlapping the edges, and whipped or basted along the edges with running horsehair sutures; more running mattress sutures through the surface of the graft bind it down to the bed of the defect. If more than one graft is used, their edges are overlapped. Multiple stab holes are cut in the graft to allow for drainage. Several layers of wet gauze are

smoothly applied and tubes for irrigation are incorporated; good firm pressure is obtained with moist marine sponges fixed in place with the free use of gauze rolls and bandages. Large pads usually suffice for fixation of ankle and knee movements.

POST-OPERATIVE CARE: The original dressing is kept wet with saline introduced through the irrigation tubes. After a good many observations we have concluded that the use of the continual wet dressing gives a better chance of "take" than a dry or a grease dressing. This conclusion has been arrived at in spite of the apparent "messiness" and objectionable odor and in spite of active opposition to the idea by others (and even by ourselves).

After four days the first dressing is done, the sutures are removed and the overlapping edges trimmed away carefully. One per cent silver nitrate, five per cent gentian violet or some other mild antiseptic is gently painted over the edges and surface. The graft and surrounding areas are usually found so clean that wet dressings are no longer necessary and one or two layers of fine mesh gauze impregnated with four per cent xeroform, five per cent scarlet red or five per cent zinc oxide, is applied. A good firm pressure dressing is put over this and any necessary joint fixation is continued.

If there is fluid, pus or blood under the graft, it is evacuated through new small openings; if there is evident loss of any area with a gross amount of pus around it, the dead graft is trimmed carefully away; if there is bacillus pyocyanus infection present, the whole surrounding area is washed with soap and water; if an active fight is begun immediately and carried on over several days, much surface area can be saved. Antiseptics are used locally, fine mesh gauze is applied smoothly over the whole area, and a wet dressing is re-applied. Adequate irrigation with Dakin's solution or saline is maintained to insure continual wetness, and the dressing is carefully changed each day. In three cases in this series it was necessary to repeat the operation because of primary loss of graft.

After a few days, in clean cases and as soon as infected cases have become clean, the usual grease gauze or sterile cold cream is used over the area and, after suitable padding is in place, an elastic bandage is applied. Walking should be prohibited for two weeks and activity curbed for another week or two after this.

The patient is sent home with the elastic bandage in place to be worn while up and around until no cyanosis appears in the graft during activity. If this continued pressure is neglected, there may even be small hemorrhages under, and into, the graft.

If the graft is directly over the shin or ankle, it should be further protected with padding for several weeks.

A source of annoyance in some patients is the collection of sebum in and under the graft; this occurs first as small raised lumps and, when recognized, these should be evacuated by a fine opening over them. If this is not done, these areas may become infected as an ordinary pimple and the pus may dissect under the graft and actually cause some surface loss.

If the base obtained at the time of removal of the ulcer has been a very avascular one, there may be a good early "take" of the graft and then later some may be lost, apparently from an actual lack of blood supply. In these cases and in others where there may be open areas or loss of surrounding scar epithelium, conservative treatment with elastic bandages over the dressing or elastic adhesive strapping is used until there is healing or it is

recognized that another operation will definitely be needed.

RESULTS OF TREATMENT

Free thick split skin grafts were used in the repair of sixty-two patients: fifty-nine direct replacements after excision of ulcers; three to cover defects left from flaps.

1 Operation—Patients healed from one to six years	31
1 Operation—Patients still under observation ..	7
1 Operation—Healed but patients cannot be traced	4
1 Operation—Patient dead from malignancy..	1
2 Operations—Patients healed from one to seven years	12
2 Operations—Untraced	3
3 Operations—Patients well one and one-half to eight years	3
3 Operations—Patient still under observation ..	1
Amputations definitely have been avoided	3
Malignancy probably avoided	1
More than one operation required because of primary loss of graft	3
More than one operation required because of late ulceration of graft; one was x-ray and one was arterial disease plus x-ray burn	3
Second operation required because of breakdown in adjacent scar. In all others with more than one operation, subsequent operations were required because the extent of the lesion prohibits doing complete repair at one time or because both legs were involved.	
Patients died before repair could be done	2
Repair accomplished with sliding flaps, patients well	2

Percentages of cures are misleading because it is recognized that many patients may develop another ulcer at any time; however, it is probable that all patients can be kept well if they will report for treatment, and therefore, we do feel that the untraced and the patients still under observation should be counted against the healed cases.

COMMENT: This article has been transcribed very much as it was written. The reduction of words in an article of this type is very difficult.

It is well established that long standing ulcers are best treated by the supplement of skin whether the graft be a small pinch graft or a small split graft, depending a great deal on the type of case at hand.

One thing that is noted by men doing this work is that the placing of normal skin in any ulcer area seems to stimulate a great many cases to better epithelialization.

One must be acquainted with the pre-operative care, the preparation of the patient, the details of the application of the graft and the after care, to secure satisfactory results.

At the Crippled Children's Hospital, we use grafts of all types in long standing ulcers. The most common graft used is the small pinch graft or the small split graft.

The authors are to be complimented on the thoroughness of the article as well as the fine results obtained.

ORTHOPAEDIC SURGERY

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Rotary Dislocation of Atlas on Axis. J. O. Rankin. *American Journal Surgery*, Vol. XXXII, No. 27, April, 1936.

The author adds nine new cases of this dislocation which he believes is more frequent than is generally indicated. The mechanism is usually a mild force or twisting of the head with a resultant tear of the capsular ligament and dislocation of one of the atlantal facets. Symptoms are severe pain in one or both sides of the neck and inability to rotate the head, with tilting of the head toward the dislocated side. Palpation reveals the spinous process of the axis on the opposite side of the midline toward the side to which the chin is rotated, and straightening the head increases the deviation of the axial spine from the midline. Satisfactory roentgenograms are often difficult to obtain because of the position which pain causes the patient to assume. In eight of the cases reduction was by means of the jury-mast. Open reduction is difficult and rarely necessary. Casts were applied and retained for from five to eight weeks. In cases where manipulation is used the Walton method is preferred.

Three Cases of Fracture Resulting From Electric Shock. H. Jackson Burrows. *British Journal Surgery*, Vol. XXIV, No. 159, July, 1936.

Three instances of fracture of the upper end of the humerus, occurring as a result of non-fatal electric shock, are cited.

The first patient was a barber who received a shock while handling a vibro-massage machine. The next day he complained of severe pain in his shoulder. Nine weeks later a roentgenogram showed a crush fracture of the head of the humerus.

In the second case, the injury was from a shock by an electric kettle, followed by a fall. It was not certain whether or not the fall contributed to the avulsion and fracture of the greater tuberosity of the humerus, which roentgenographic examination revealed.

In the third instance, the patient fell against a water tank while carrying an electric lamp. Roentgenograms showed an impression fracture of the humeral head opposite the glenoid.

It is suggested that the fractures were caused by the violent uncontrolled contraction of the shoulder muscles. The question is raised whether the passage of the current through the bones was a factor.

Adhesions of Joints and Injury. R. Watson Jones. *British Medical Journal*, 1, 1925, May 9, 1936.

The author states that the conditions under which adhesions form around the joints constitute one of the fundamental problems of fracture treatment. It is a problem which is frequently misunderstood.

Joint stiffness after injury is due to adhesion of the capsular plications, which in turn, is the result of organization of any exudate in the peri-articular tissues. In fact, it is the recurrence and persistence of serofibrinous exudation which provides the key to the problem of adhesion formation. Frequently the source of the exudate is extra-articular, as the joint itself is normal.

The following factors, several of which may occur in the same case, are considered responsible

for continued or recurrent exudation: (1) disuse with continued venous stasis, (2) recurrent oedema, (3) the recurrent trauma of immobilization in a position of strain, (4) continued infection near a joint, and (5) the continued irritation of foreign bodies near a joint.

Immobilization in itself is not a major factor in the development of adhesions when uncomplicated by other factors. Any adhesions formed are the result of venous stasis. Once a patient resumes active use of the part, recovery of normal function occurs.

The author emphasizes the serious disability that follows the presence of continued oedema in a limb which is immobilized. "There is no more potent factor in adhesion formation, for oedema is the glue of which adhesions are made." Swelling is controlled by external pressure and active muscle exercise.

The author particularly denounces passive stretching and exercise, since such therapy results in a continual recurrent traumatic exudation, with the formation of fresh adhesions.

Under the heading "Foreign Bodies Near Joints," the use of skeletal traction near joints is condemned particularly, because where the foreign body (pin or wire) penetrates the skin there is the possibility of a low-grade infection. This infection may be of minimal degree and may show no external signs, but it is the cause of continued exudation in neighboring tissues, and hence of adhesions which are much more resistant than the adhesions of simple immobility. Again, in contrast to fracture experience in this country, the author states that the factors noted account for the frequency of permanent stiffness of joints when articular fractures are treated with wires and screws. For example, he believes that olecranon fractures treated by internal wire fixation usually exhibit permanent limitation of extension movement, because the wire is associated with a low-grade inflammatory reaction, and the resultant irritative serofibrinous exudation gives rise to peri-articular adhesions which are particularly resistant.

INTERNAL MEDICINE

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By HUGH JETER, M.D., F.A.C.P., A.S.C.P.

Progress in Internal Medicine. Infectious Diseases: Review of the Current Literature. Hobart A. Reimann, M.D., Philadelphia. *Archives of Internal Medicine*, Vol. 58, No. 2, August, 1936.

In this review the author has reviewed most of the recent work on various and many different infectious diseases.

Attention is called to a report of an epidemic of malaria in Ceylon, beginning in 1934, in which by June, 1935, 1,500,000 persons of the 3,100,000 in the wet zone were infected. There were 90,000 deaths, which was more than double the usual number of deaths from malaria in this section of the island. In other regions the death rate from malaria was about one-third more than usual. This unprecedented outbreak was attributed to abnormal weather conditions. In the wet zone the region is densely populated, the rivers are almost always full and the conditions are usually unfavorable for the breeding of *Anopheles* mosquitoes. In the so-called dry zone malaria is endemic. The season after April, 1934, was unusually dry, so that many of the flowing streams became a series of puddles,

which were somewhat replenished by light rain-falls in July and October, thus furnishing suitable pools for mosquito breeding. In Ceylon eighteen varieties of *Anopheles* are found, which breed only in the dry zone.

Quinine therapy was successful in general, but relapses frequently occurred. Quinine sulfate and quinine bisulfate were most commonly used. Plasmochin and atabrine were used only when conditions provided the opportunity for constant observation, because of the liability of untoward side-effects. When atabrine was used, two injections usually sufficed, but similar results were obtained also with two intramuscular injections of quinine hydrochloride. The impression was gained that relapses after the use of atabrine by mouth were less frequent than after long continued treatment with quinine and that both procedures were better than two parenteral injections of atabrine.

The Preservation and Concentration of Human Serums for Clinical Use. Stuart Mudd, M.D., Earl W. Flosdorf, Ph.D., Harry Eagle, M.D., Joseph Stokes, Jr., M.D., and AIMS C. McGUINNESS, M.D., Philadelphia. *Journal A. M. A.*, Vol 107, No. 12, September 19, 1936.

As a result of the recent demand for blood serum from convalescents and also from healthy adults in the treatment, both prophylactic and curative, of various diseases of childhood, there is considerable demand for human blood serum. The difficulty of securing sufficient amounts when needed has led to various methods of collecting and preserving it.

In this connection the authors report concerning the organization work of The Philadelphia Serum Exchange which was established in the spring of 1934.

The work of pooling and processing was done at the beginning in the department of bacteriology but for the past two years has been conducted at the Mulford Laboratories of Sharp & Dohme through the courtesy of the director, Dr. John Reichel, and Mr. John S. Zinnser, president of Sharp & Dohme. The serum obtained on any given day is transferred to pyrex bottles and rapidly frozen in a bath of dry-ice in methyl cellosolve. The frozen serum is stored in a refrigerating vault at from -12 to -15 C. until serum from thirty to ninety donors has accumulated. All is then thawed, mixed and filtered through a Berkefeld W filter. The filtered serum is distributed sterily into the final containers and there frozen and lyophile processed. Sterility tests are conducted on the filtered serum in accordance with the requirements of the National Institute of Health, and the serum is not released until sterility has been demonstrated.

The lyophile process of preservation is being used and is described as follows: Briefly, the serum or other biologic material to be preserved is distributed with sterile precautions into glass containers. These are immersed in a bath of dry-ice in a commercial solvent (methyl cellosolve) at a temperature of approximately -75 C. The containers of the frozen serum are attached to a manifold which leads through a condenser to a vacuum pump. The condenser is kept at -75 C. with a bath of dry-ice in the same solvent. The whole system is rapidly evacuated and held at a pressure below 0.05 mm. of mercury by the vacuum pump. Water vapor evaporates from the frozen serum to be trapped as ice in the condenser; the rate of evaporation is sufficient to keep the serum frozen throughout the process of disiccation. The containers are sealed without breaking the original vacuum. Storage for prolonged periods should be at refrigerator temperature. The light porous residue of serum solids quickly and completely dissolves

in distilled water to regenerate a serum the potency of which is not detectably different from the original serum. This procedure has been termed the "lyophile" process.

SUMMARY: The clinical usefulness of human serums has been considerably broadened by the development of methods for their preservation and concentration. Convalescent serum may be collected at times of epidemic prevalence and held until needed. Donors may be specifically immunized and their serum harvested for later use. Pooling on a large scale, for the purpose of augmenting polyvalence, is facilitated.

Physiologic Effects of Benzedrine

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Will Be Found on Page 423 of This Issue

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NAME	Year of Birth	Place of Birth	School of Graduation	Year of Graduation	ADDRESS
Hubbell, Miriam	1902	Neodesha, Kansas	University of Okla.	1935	Sacramento, Calif.
Foster, Lloyd G.	1908	Clayton, N. M.	University of Okla.	1934	Oklahoma City, Okla.
Rude, Evelyn (F)	1911	Enid, Oklahoma	University of Okla.	1935	Enid, Oklahoma
Smith, Virgil D.	1910	Siherdale, Kansas	University of Okla.	1934	Thomas, Oklahoma
Ross, Hope Snider (F)	1910	Vonore, Tenn.	University of Okla.	1935	Weehawken, N. J.
Cunningham, Hugh Alexander	1907	—, Indiana	University of Okla.	1934	New York, N. Y.

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A General Discussion of Fractures of the Spine*

D. H. O'DONOGHUE, M.D.
OKLAHOMA CITY

It is obviously impracticable, in a discussion so limited as this must be, to give any comprehensive survey of the intimate detail of diagnosis and treatment of the many various types of fracture of the spine. Nor am I able to debate the relative merits of the various controversial types of therapy in order to justify any one type. Rather let me attempt, in the brief time allotted to this discussion, to review the high lights of diagnosis and treatment of the various groups of spinal injury in an effort to emphasize again certain salient points of utmost importance.

In reviewing this subject there presents itself immediately an outstanding division of this field into two distinct groups; namely, those having cord symptoms, and those with no evidence of injury to the spinal cord.

I. INJURIES NOT INVOLVING THE SPINAL CORD

By classifying a case into this group, we have immediately simplified the problem. But a word of warning; a patient may not be blithely placed in this group until the surgeon has completely satisfied himself of the absence of any cord symptoms. Utmost care must be taken, recalling that for every case of complete severance of the cord, there are many cases where cord injury is slight and where early detection of nerve symptoms may permit us to prevent an increasing palsy. This point will be discussed in further detail under another heading.

A. COMPRESSION FRACTURE

1. *Etiology:* The ordinary initiating

factor in this type of fracture is a jack-knifing of the spine, or a compression force applied to the body of the vertebra. This condition is much more common in the lumbar and dorsal areas for anatomical reasons and is especially common at the twelfth dorsal and the first and second lumbar. The vertebra above is forcibly pushed down against the body below.

2. *Pathology:* The cancellous body of the vertebra is crushed downward and forward. This may be so slight as to defy detection, or may be so complete as to entirely obliterate the vertical diameter of the body. It may involve one vertebra, or many. Cord injury is not common but does often occur. The forward wedging of the body, if severe, causes an angulation of the spine forward with a prominence of the spinous process posteriorly. The intervertebral disk is usually intact.

3. *Symptoms and Diagnosis:* Following the history of an injury, localized pain in the area of involvement, with muscle spasm of the spinal muscles are suggestive signs. There may be a palpable or visible kyphos. Pain of nerve root type involving the distribution of the roots of the involved level may be present and if so, presents a valuable diagnostic sign. Examination will reveal tenderness over the involved area; pain on any motion of the spine, especially flexion; pain on direct percussion over the head or heels. A valuable sign in questionable cases is that with sharp hyperflexion of the neck with the patient supine, there is localized pain at the involved area. In the presence of the above suggestive findings, well made A. P.

*Read before the Surgical Section, Annual Meeting, Oklahoma State Medical Association, Enid, April 7, 1936.

and lateral x-rays of the spine will ordinarily reveal the fracture.

4. *Treatment:* Before considering the treatment of a back injury itself, let me emphasize the evident point that the general condition of the patient is all important. In the presence of hemorrhage, shock, multiple fractures, or other complicating injuries, we must remember that, providing there is no cord injury, the treatment of the back may be confined to recumbency and protection, until such a time as the patient will not be unduly jeopardized by manipulative correction and cast. We must not, however, make this an excuse for delaying treatment unnecessarily. Without any question, the earlier an attempt at correction of deformity is made, the better is the chance for complete correction. It is not proper to adopt a routine of placing these patients in bed for a few hours or days prior to corrective treatment. Early immediate recumbency is essential. In the presence of deformity it is advisable to carry out one of the many different methods for securing forcible hyper-extension at the involved area. A well fitting plaster cast, preferably of the plaster bed type, is probably the most satisfactory method for immobilization. This cast should be well padded and should include head and neck in the higher locations and the thighs in the lower locations. Simple immobilization in bed, or on a Bradford frame, is probably not sufficient in the ordinary case. Recumbency should be continuous for six to ten weeks, depending upon the extent of bone destruction. Following this procedure, the patient may be allowed up in a plaster cast, with the spine in hyper-extension. It is imperative that he not be allowed up in his original cast, since this will have become loose and ill-fitting. A new and snugly fitting cast should be applied with as little padding as is consistent with comfort. The higher the level of the fracture, the less danger is attendant upon early weight bearing. The length of time this cast should be worn must depend upon the severity of injury and progress of recovery. Ordinarily two to four months should suffice. Only the more severe cases should require brace following this cast.

B. DISLOCATION OF THE ARTICULAR FACETS

This occurs almost entirely in the cervi-

cal spine and may involve any of the cervical vertebrae, including the atlas and axis. There may or may not be associated fractures of the body, articular facets, laminae, or pedicles. Obviously a detailed discussion of each of these cannot be given here.

1. *Etiology:* Ordinarily this type of injury is caused by sudden rotation of the neck or forcible twisting of the head with the trunk fixed. Owing to the limited rotary range of motion an excess of rotation forces the inferior facet of the upper vertebra forward over the superior facet of the vertebra below. Continuation of the force may cause fracture of bone or ligament.

2. *Pathology:* Pathologically we find an actual displacement of the joint with the facet of the upper vertebra locked in position either upon, or in front of, the anterior edge of the facet of the lower vertebra. Usually there will be ligament injury, often muscle tear or fracture.

3. *Symptoms and Diagnosis:* There is usually the history of a sudden twist of the neck, followed by a stiffness of the neck, pain on motion, and muscle spasm. The head is usually turned toward the unaffected side and tilted toward the involved side. There will usually be a fairly good range of flexion and extension. Lateral motion and rotation are sharply limited, especially toward the involved side. X-ray examination is of extreme importance, but great care must be taken in the interpretation of films, since these displacements are often difficult to see. It is extremely important that diagnosis be made early and that these cases are not carelessly called wry neck, stiff neck, sprain, etc., until an exhaustive study of the individual case has been made. The success of treatment is in inverse proportion to the time elapsed since the injury.

4. *Treatment:* Intelligent treatment consists of a careful study of the case with determination of the exact pathology. In early cases manipulative reduction is surprisingly successful. Some form of anesthesia, local or general, must be used. The greatest precaution must be used that the manipulation is done with the utmost care with the complete avoidance of any force. If success is to be obtained, it will follow with the application of minimal traction

and manipulation. In careless or unskilled hands, tragedy may supervene. Following successful manipulation a cast may be applied to include chest, shoulders, neck, and head to insure immobilization. As an alternative light head traction in bed for two weeks, followed by a cast or Thomas collar may be employed. In the older cases and indeed, in many recent cases, prolonged head traction may be employed and will often result in a complete correction without manipulation. The older the case, the more prolonged must be the support. Cases complicated by fractures present a serious and dangerous problem. Each case must be sharply individualized and its particular pathology studied. The intricacies of this problem cannot be discussed at this time. Suffice it to sound the warning that injuries to the cervical cord have tremendous potentialities and must not be lightly risked.

C. FRACTURES OF TRANSVERSE PROCESSES

Fracture of the transverse processes may be single or multiple, with displacement or without displacement. As this is true in any spine injury, care must be taken in interpretation of x-rays, to eliminate congenital anomalies, epiphyses, rudimentary rib, etc. If a condition is once diagnosed as a fracture, it is well nigh impossible to relieve the patient of that impression.

1. *Etiology*: This condition is usually caused by muscle pull, occasionally by direct blow to the back.

2. *Pathology*: Ordinarily the lateral process breaks just lateral to the base of the process and usually there is little or no displacement. As a rule there is accompanying muscle tear with hematoma formation and often ligament injury.

3. *Symptoms and Diagnosis*: These cases present a history of strain followed by persistent pain the flank. Any movement causes contraction of the lateral lumbar muscles and is painful. This is demonstrated most definitely by lateral flexion toward the opposite side. Active contraction of, or passive hyper-extension of the psoas muscle is ordinarily painful. On direct palpation there is localized tenderness with muscle spasm.

4. *Treatment*: If there are multiple fractures, the patient should be placed in

a snugly fitting cast and kept in bed for two weeks. He may then be allowed up in a snugly fitting cast, which he should wear for about four weeks additional. With no displacement, the recumbency may be dispensed with. In my opinion there is never any indication for removal of the lateral process. A brace is usually not required. Recovery in a case treated promptly should be complete.

D. FRACTURES OF THE SPINOUS PROCESS OR THE LAMINAE

1. *Etiology*: This type of case is not common. It usually occurs following direct violence to the spinous process, but may occasionally follow sharp hyperflexion of the spine and may be found in association with compression fracture of the body.

2. *Pathology*: There is a partial or complete fracture of the spinous process at its base. Very occasionally the process will be split. In rare instances the fracture involves the laminae on either side of the spinous process and cord impingement may ensue.

3. *Symptoms and Diagnosis*: These cases present a history of a blow over the back, followed by severe and localized pain. Examination reveals contusion over the involved area with local tenderness. Flexion of the spine, placing tension on the spinal ligaments, causes an acute and sharply localized pain. There is usually a spasm of the extensor muscles to protect the ligaments from tension.

4. *Treatment*: Treatment is essentially immobilization of the spine in extension. This can best be accomplished by a snugly fitting cast, including enough of the spine adequately to prevent motion. If there is a loss of integrity of the neural arch, bed rest is essential, preferably in a plaster cast, which should be continued for six weeks. This should be followed by protection in a plaster cast for an additional six to eight weeks. A fracture involving the neural arch is much more serious than one of the spinous process alone and should be treated accordingly. Pressure on the spinal cord must be relieved by operative elevation of the fragment.

II. INJURIES OF THE SPINE WITH INVOLVEMENT OF THE SPINAL CORD

This group represents the minority of

cases of injuries involving the spine. Like so many minorities, however, it is an extremely dangerous and complicating factor. In these cases the most keen surgical judgment is essential in determining the exact procedure to be followed. The ultimate outcome very often depends largely upon prompt decision by the attending surgeon and early, adequate care.

1. *Etiology:* The essential cause of cord injury is, of course, some type of pressure on the cord. This may be constriction from extreme angulation; it may be impingement by a displaced fragment of bone; it may be the shearing effect of displacement of one body on the other; and in a small, but extremely important, group the lesion may be due entirely to pressure by hemorrhage either extradural, subarachnoid, or intramedullary. Force may be continuous or may be applied and quickly relieved, leaving a damaged cord.

2. *Pathology:* As indicated, the cord may be severed, may be contused so as to destroy its substance, may be pressed upon by bony fragments, or may be compressed by hemorrhage. Any of these factors may completely destroy the cord function if continued.

3. *Symptoms and Diagnosis:* Only by the most careful and complete neurological examination with thorough cooperation of the patient, can actual localization of the nature and extent of injury be determined. A very careful record must be made of each successive examination. Even in cases which apparently present a complete cord severance, we may find a ray of light which will guide us in a determination of the type of damage done. All measures of value must be used, more especially in the attempt to determine accurately the time of onset of paralysis, the progression of paralysis, the exact location of the lesion. Spinal puncture is of great value when properly interpreted and may be the determining factor in treatment.

4. *Treatment:* Obviously we cannot here go into great details as to therapy. We have essentially two types of treatment; the one non-operative, the other surgical. Unless there is a definite indication for operative interference, conservatism should be employed. By this method we do not mean that the patient should be ignored or neglected. Careful correction

of deformity is carried out and immobilization secured. Often traction to the head or legs, or both, is indicated. Under such a regime, marked improvement may be expected in the majority of cases. What then is the indication for surgery? There are certain definite indications. First, if the extent of cord involvement is definitely increasing; second, if there is definite impingement of bone unrelieved by manipulative correction; third, if in a complete paralysis there has been a history suggesting a period of time elapsing, however short, before paralysis supervened; fourth, if there is a definite and continuous increase of pressure of the spinal fluid, with blood in the fluid. Aside from these definite indications, there is a host of cases in which the decision for operation or non-operation rests with the surgeon. In every case of injury to the cord the patient is entitled to a careful study and a definite decision, preferably within the first few hours. The more promptly the operation can be done, the more chance there is for recovery. No patient should be thrust, willy nilly, into one group or the other until there has been careful consideration of his individual case. In the last analysis it is probably more just to submit too many cases to the hazard of surgery than to withhold operation from a case which may be improved. Whether operated or not the utmost must be done to correct deformity, improve general health, prevent contractures, minimize bed sores, protect bowel and bladder, etc. Each surgeon must analyze each case to his own satisfaction and then proceed with the treatment which in his judgment will most likely eventuate in maximum recovery with minimum risk.

* * *

DISCUSSION

D. Roy Fisher, Frederick: Mr. Chairman and Gentlemen—To me this has been a very interesting and excellent paper on a subject of the utmost importance, and one that is becoming more important each day because of the tremendous increase in the number and severity of accidents. To the lay mind and unfortunately to many medical men as well, a broken back or neck is a broken back or neck, and as such it is considered a very dreadful accident which results either in death or complete and

permanent paralysis. I think this point of view is perhaps a heritage from the pre-x-ray days when only the most severe fracture dislocations with extensive bone injury were recognized. At the present time we know in the large majority of cases that fractures of the spine are not accompanied by paralysis and that with proper treatment instituted early, many of these patients recover and are able to resume their former occupations. As Dr. O'Donoghue emphasized, fractures of the spine are not dangerous from the standpoint of skeletal injury, but they become dangerous to life only when associated with extensive injury to the cord or the facets on skeletal injury. However, skeletal injuries alone may produce prolonged disability if proper treatment is neglected. I think it is very important that we recognize these cases of untoward symptoms, because the majority of cases we get fall into this classification. A thorough x-ray study will always reveal the level and extent of the bony lesion, and the Quackensteadt test, I think, is very valuable in determining pressure. As Dr. O'Donoghue brought out, the treatment of course is reduction and adequate immobilization in recumbency until these fractures are thoroughly healed. I believe that pressure should always be relieved as quickly as is consistent with good surgical judgment, because while many cases of paralysis gradually improve, anatomical lesions of the cord as a rule are permanent, and conservative treatment does not affect them.

Dr. Kelly West, Oklahoma City: Mr. Chairman and Dr. O'Donoghue—I should like to speak for a moment on the x-ray diagnosis of these fractures. In all fractures except the first and second cervical, the lateral view is most important. In fractures of the first and second cervical, unless there is marked displacement or dislocation, they will not be seen very well, I think, with a lateral view. But in the A. P. view with the mouth open, the picture being taken through the open mouth, you will find fractures of the first and second cervical vertebrae. This is especially true in these cases we get every summer of the patient diving in shallow water. Otherwise the lateral view is most important. One cause for oversight in these cases where pictures are taken but are not adequate, is that the pain may be three or

four vertebrae below the injury, and I have seen many cases in which the picture was taken and the fracture missed entirely because the pain is referred down and the x-ray misses the fracture. Now, as Dr. O'Donoghue brought out, the tenderness is not that way. The tenderness is exactly at the point of injury, therefore before the picture is taken, examination, if carried out correctly, will bring out this point, that the spine is most tender on the particular vertebra involved. One other point I wish to bring out is that there is a possibility of having two fractures at different levels. Illustration—In this particular type of case it is very often that the pictures taken miss the upper fracture. One other point and that is most important, no matter under whose direction or what method is used, in the early treatment of these compressed fractures it is perfectly possible to lift these back up in shape by hyper-extension, by using the intercostal ligaments as a fulcrum, and we have many cases which have a marked narrowing of the body if seen early, and if the hyper-extension is efficiently carried out, the picture will show a practically normal contour of that vertebra.

Dr. Stewart, Tulsa: Dr. O'Donoghue has given us a very excellent discussion on fractures of the spine in such a limited time. There is one point in my mind that I would like to add that is very important, and that is the transportation of these fractured spines to wherever you are going to take them. As pointed out by the American Red Cross, in their nationwide service stations at different places they are locating Bradford frames for the care of those injured if fracture is suspected. So many times ambulance drivers dash out and put the patient on a stretcher and bring him in. If we have a chance to instruct these ambulance drivers to properly bring these patients in, I think we will have a minimized trauma to the cord.

Dr. Hart, Tulsa: The papers so far have dealt with injuries of the bone that are demonstrable by x-ray. Now with injuries of the spine we have another point so well attached to the first paper dealing with the injuries of the head that it seems to me some amount of discussion should be given it. That is where you have a patient examined by competent men of medicine, or

thopedic surgeons, neurologists, internists, who examine an injured man, irrespective of whether he has insurance connected with it or not, for that does make a difference sometimes, and he has irrefutable evidence of injury which the x-ray does not show, what should be done with that case?

Dr. Wiley, Tulsa: I was very much interested in the treatment that Dr. O'Donoghue outlined here, and I want to limit my remarks to the compression fracture with no cord injury in the lower dorsal and lumbar area. I was very much interested not two years ago at Cook County Hospital in Chicago in the work of Dr. Skidding and Dr. Couin in bringing in depressed fractures in rather elderly people, depressed fractures of the area I spoke of, and in treatment putting on a short jacket not including the thighs but coming down just to the hips with marked hyper-extension, and the patient was walking around in five days. Don't misunderstand—I am not advocating that we put the patient on his feet in five days; I am merely telling you what I saw. Robert Jones, of course, was the first to teach us to put the patient face down, followed by Baylor and now, of course, spread almost everywhere for the early reduction in these cases without injury to the articular facets. In the lateral x-ray you are going to see compression. In the A. P. view the articular facets are injured if they are confused. If they are not injured you can put the patient in hyper-extension with early reduction, not on a Bradford frame in my opinion, although of course I realize that is a subject of argument a great deal, with a short jacket after the period of shock. Then as soon as you can get them up, which I think is usually ten days to two weeks. I don't keep my patients down like I used to, six or eight or ten weeks. Another thing we are doing which I think is very valuable is giving the patient exercises while they are on their face, elevating the legs and arms while they are yet in the cast, early or within three weeks of the time of the accident and as soon as the soreness is out. That does not in any way tend to separate the fracture. In your hyper-extension the weight is coming on the articular facet all right and not on the body of the vertebra. It develops those spinal muscles that will atrophy when you put them in a cast.

Dr. Aisenstadt, Picher: We have heard it said and have read a great deal about muscle strain and muscle pull being the instance of fracture of the transverse processes, particularly of the lumbar spine. A review from more than five hundred cases of back strains of varying degrees, some of them apparently very severe, has failed in our observation to show a single case of a fracture of the transverse process where direct trauma was not involved. And on the other hand, in each case of fracture of the transverse process we had the history of direct trauma associated with the so-called muscle strain. It seems that it has been an accepted thing—we read it in textbooks and hear it in lectures—that it is perhaps one of the most important ways in producing fracture of the transverse process. We have failed to find it in the work in our little clinic. So far as treatment is concerned, I agree with Dr. O'Donoghue that surgical intervention is not always indicated, and yet on the other hand, in the treatment of fractures of the spinous process I believe that it is the treatment of choice. Time and again we have attempted to treat fractures of the spinous process with other means than surgical and have had a long case with enough discomfort and pain to the patient, so that in the end we regret that we did not operate and remove that fragment in the first place.

Dr. O'Donoghue: I won't try to answer these discussions in detail, but I appreciate very much the general discussion. Regarding Dr. Wiley's discussion of treatment of the spine injury and getting them out early, some go so far as to put fifty or one hundred pounds of weight on the head. I think in selected cases that is proper but it certainly is not proper for general treatment of compression fractures of the spine. I think until that has been carried further and more definitely proven, we had better stick to conservative methods of treatment. As far as Dr. Aisenstadt's remarks are concerned, I think I have seen cases where there were fractures of the transverse process caused by muscle strain alone. Of course I have also seen them where there was direct injury. I could discuss this very much more, but time will not permit.

The Unpadded, Direct or Skin Plaster Paris Cast in the Treatment of Long Bone Fractures*

RAYMOND G. JACOBS, M.D.

ENID

The subject, *e. g.*, "Long Bone Fractures" is entirely too comprehensive to be covered in fifteen minutes, consequently I will limit the allotted time to a brief explanation of the unpadded, direct or skin plaster Paris cast, followed by a moving picture demonstrating the application for simple fractures of the arm, forearm and leg.

The ideal case for skin immobilization, and also for any cast, is a simple, transverse fracture with little or no edema or swelling. But since most fractures, like everything in medicine, are not broken to our desired specifications, we are compelled to take them as they come. However, I will say if the swelling is considerable, it is best to reduce and then immobilize temporarily with either a posterior moulded slab, a light padded circular cast or skeletal traction with elevation until the primary swelling subsides. (This is accomplished in from five to twelve days.) Then put on the skin cast with walker attachment. If the cast is applied when the swelling has reached its peak, then as it subsides the skin will pull away from the cast, permit too much movement and defeat its purpose. If the cast is applied before local swelling becomes pronounced the even surface of the cast produces equalized pressure, prevents the swelling or at least disseminates any such local tendency. Occasionally, it is necessary to split a cast but very infrequently.

The principle and mechanics of the skin cast is very simple. The wet plaster Paris is plastered to the unshaven hairs and skin and is carefully moulded to the contour of the surface, thus producing an even pressure and adhesion. There is no intervening material to permit a shift or unequal pressure from wadding or movement from compression of the padding

later. The skin, which is attached to fractured bones by its soft tissue, *e. g.*, fibrous tissue, muscle tissue, fascia, tendons and ligaments, is glued to the cast and this is maintained for at least four to six weeks, when the superficial skin layer and hairs are desquamated. When this direct cast is removed in four to six weeks a perfect mould of the skin and hairs is imbedded on the inner surface. Therefore, during this interval good immobilization has been maintained and enough new bone formed to take care of slight shrinking of the extremity in the cast. For the lower extremity, in walking the weight is not entirely carried by the bone but principally by the adherent skin above the line of fracture, very much like the cuff arrangement of the modern artificial leg. The entire cast fits evenly and snugly like a form-fitting stocking with a glue or adhesive inner surface.

The application of the skin cast is not difficult or time consuming, merely a matter of care and precision (and common sense). In the lower extremity, first having obtained good reduction by whatever method most familiar with, a four to six inch circular of stockinett is placed at the upper limit of the cast. With the extremity held in position by assistants, the posterior slab, of the desired width and length, is prepared on a smooth, wet surface with four to eight thicknesses, depending mainly on the weight of the patient. I have found it advantageous to double the foot part to give a stronger toe platform. This measured, soft, plaster Paris slab is moulded to the posterior part of the lower extremity beginning at the circular cuff and ending one-half inch beyond the toes and doubled back about two-thirds on the foot for stability. The foot is at right angle with the leg and the knee is straight or slightly flexed so that the ham-string tendons are not prominent. The slab is firmly moulded

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to the skin and maintained by the assistants, care being made not to have tension over the angle at the heel. At the ankle it is best to cut the flanges and tuck the leg part under the foot part. The roller plaster Paris bandage is begun at the cuff and one layer applied in a progressive circular manner without tension, or strings, or hard particles (I call them rocks). It is merely laid on without wrinkles and all folding is done on the posterior slab. In this way the direction of bandaging can be changed without wrinkles on the bare skin. This first circular should be applied when the slab is wet. Like the slab, the amount of circular bandage depends on the patient's weight and the plaster, usually four to six thicknesses are sufficient. Usually twenty-four hours are given to dry and then an U-shaped strip iron is fitted to the cast and held in place with one or two circulars and the patient permitted to walk on the third day and upward.

For fracture of the ankle, the cast should extend to the knee.

For fracture of the leg, well up on the thigh with the same technique.

For fracture of the femur, the cast must incorporate the pelvis and here the technique is slightly altered by placing a circular of felt around the pelvis and applying the circular plaster Paris snugly and firmly with tension so that the pelvis and fractured femur cannot move separately. Then it probably is best not to have too much activity until there is some bony union.

For the wrist a plaster moulded slab is sufficient with a felt pad on anterior and posterior surface to hold fragments in position and then apply a circular gauze bandage. After the slab has hardened then put on adhesive strips to hold it in position. Start function the next day.

For forearm and humerus, the only difference is to pad with felt the bony prominence, *e. g.*, the condyles, olecranon, shoulder and axilla. The measured, wet plaster Paris slab is fitted to the chest wall, along medial surface of the arm, forearm, and hand and the circular plaster Paris bandage applied as for the lower extremity. The chest is incorporated and the upper extremity held in abduction, as necessary

for position, by a wood or plaster Paris brace from waist to elbow. I usually place a circular felt coaptation splint if the fracture is in the upper one-third of the humerus.

For fractured vertebra, with patient in hyperextension as necessary, it is best to place a felt pad around the pelvic prominences and a strip over the spinous processes, covering the body with a stockinett. Then apply the plaster rather snugly.

Immobilization, as it is used in the extremities, should not discourage muscular movement, especially of the fingers and toes. So frequently when a cast is removed, there is marked (unnecessary) atrophy of disuse, necessitating another interval of disability to re-establish function. Whereas, this disability, is in the most part due to improper instruction to the patient to use all available muscles of the immobilized part. This advice to the patient is so simple and yet of such great importance in the treatment of fractures, that it is too often forgotten. The treatment of fractures does not end with reduction and new bone formation, but is complete only when you have restored the function of the part and the muscles should not be neglected during bone formation. Time will not permit discussion of injuries to other important soft tissues.

The chief danger is from pressure, producing soft tissue necroses, vascular obstruction and paralysis of superficial motor nerves. The former two can be eliminated by care in the application of cast and observation of the extremity; the latter by judicious use of felt pads over prominences, especially where a nerve comes near the surface, as done by Dr. Boehler of Vienna, whom I understand was the originator of skin casts.

The advantages are distinct. Especially for leg and ankle fractures, it decreases the period of disability and permits a varying degree of independence and even of occupation. By permitting function, it decreases the muscular atrophy so often seen. As to how much this activity stimulates new growth is not known, but it is reported to be an aid when bone formation is slow. The casts certainly are less bulky and heavy and the patients do not mind their presence. These casts permit patients

who do office and clerical work and drive cars or trucks, to go on without much loss of efficiency. Certain occupations are not amenable to walking casts. For example, one of my patients was a lineman for a telephone company and another was a bareback rider in a circus, but they at least could be up and about. For the wrist, forearm and arm, it is less heavy and cumbersome and permits more freedom of movements.

To give you a visual picture of the skin casts, I have prepared a moving picture of its application for simple fractures of the arm, forearm and ankle.

* * *

DISCUSSION

Dr. Rountree, Oklahoma City: Dr. Risser and members of the Surgical Section—Dr. Jacob's paper on fractures was obviously one that could not be covered in a few minutes, neither can this discussion be covered in a short time. I should, however, like to comment on several points. There is no objection to these non-padded casts provided you know how to put them on. Non-padded plaster casts should not be used unless you have the patient under your direct observation for at least forty-eight hours to know whether or not circular damage will result from the non-padded cast. We have no fault to find with non-padded casts, in fact my resident is an advocate of their use, but he knows how to apply them and so does Dr. Jacobs, but for the average surgeon to apply non-padded casts it is a dangerous procedure unless he knows the importance of keeping the patient under observation for the pressure necrosis and things which non-padded casts will give. This is the age of gadgets in the treatment of fractures. We are told that such and such a splint, such and such a pin and such and such an appliance will do the work; the instrument makers tell us they will reduce the fracture and everything will be all right. Gentlemen, what we need to do is to get back to principles and reduce the fracture and hold it until we get union. Appliances may aid us in reduction and in many cases aid us in obtaining position until the frac-

ture is united, but we see too many gadgets and we need to get back to the principles in the treatment of fractures of the long bones. As we all know, in fractures of the lower extremity if we have fair apposition of the fragments and no shortening and union in functional position, the patient will have an excellent result. It doesn't make any difference how you treat it or what you do for it. Those are the principles we should get back to. In the upper extremity the function is also to be considered, and it matters not whether we use non-padded casts or padded casts or pins or gadgets as long as our end result is good. End results depend on function. We don't treat fractures from the standpoint of good x-ray pictures. I admit anatomical apposition is to be desired and should in every case be the thing to strive for, but if we can't get perfect apposition and perfect alignment with the union in perfect apposition, if the fracture is reduced and that leg has the normal physiological purpose for which it was intended restored, then we have an excellent result. Now, I believe also that this question of walking is an excellent thing in fractures of the lower extremities. In Pott's fractures we can put on walking irons and get the patient up on his feet. This preserves muscle function, and there has been some physiological work done which shows that the muscle atrophy in connection with the fracture is less than in complete immobilization; in other words, if you have muscle function and muscle play about that joint, then you don't have as much atrophy as you would have otherwise. The walking iron is an excellent thing, but we have got to know how to use it and until we do know how to use it, we should be very conservative in our use of it.

Dr. Jacobs: I wish to thank Dr. Rountree for his discussion. I realize that non-padded casts are dynamite and if there was any trouble from its use we would have a kind of weak thing to stand on. However, it does work out very nicely and as we started using it at the City Hospital at St. Louis we went ahead with our fractures that way. We have used them for several years and have found good results.

Giant Cell Tumors of Bone With Specific Reference to Parathyroidism*

GEORGE LEROY GOODMAN, M.D., M.Sc.
YUKON

Giant-cell tumors are new growths of the bone. These growths are of a cystic nature, dissolving the bone near the epiphyses and causing a swelling of the surrounding tissues to occur as new bone is laid around the progressively enlarging tumor. No pain or fever is associated with the tumor itself. These tumors are so normal because of the distribution in them of an occasional cell ten to a hundred times larger than the great majority of cells of which the tumor is composed. These giant-cells have the appearance of being simply many of the smaller cells grouped as a family. Since in the character of the cytoplasm and of the nucleus the giant-cells differ from any cell normally present in the tissues, we have to assume that these are a special differentiation of mesenchymal cells, and represent a specialized development and an agglutination. These cells are normally seen in the development of the bone, and are known as osteoclasts. Their function apparently is to return the precipitated inorganic salts to solution, and to digest the collagenous base or stroma of the bone. Their presence in tumors merely emphasizes the osteogenetic origin of the tumor. Geschicter and Copeland¹ say that the "mesenchymal cells agglutinate and form giant-cells which 'eat' avenues through bone for new blood vessels."

For almost a century the nature of giant-cell tumors has been under consideration. At first they were looked upon as being malignant on account of their resemblance to bone sarcomas, and it required several decades of investigation to disclose their relatively benignness. The condition was first described by Sir James Paget, in 1845; in 1854, he further elaborated his work. He emphasized the generally benign nature of the tumor, but cited cases which

appeared to be malignant. Surgeons and pathologists, since 1860, have expressed the view that giant-cell tumors were only locally malignant. In recent years there has been some conflict of opinion as to whether these were neoplasms or inflammatory products; at the present time they are commonly regarded as inflammatory, as will be brought out in this paper.

How recently relation between hyperparathyroidism and bone tumors has been suspected is shown by the fact that, in 1912, Ochsner and Thompson,² in an extensive treatise on thyroid and parathyroid conditions, allowed one sentence to say "Askanazy has called attention to a tumor apparently derived from parathyroid tissue, which he found in osteitis deformans." In 1915, Schlagenheimer recommended excision of a palpable parathyroid tumor in a case of osteitis fibrosa. The trend of thought among investigators is that there is a distinct connection between osteoporosis, calcium nephrolithiasis, renal insufficiency, Paget's disease, bone cysts, giant-cell tumors and parathyroid dysfunction. In a series of lectures by Wagoner³ of Philadelphia, in 1935, this was well brought out, and numerous workers are now correlating all of the facts that are available. Guy⁴ concludes that the connection between neoplasms of the parathyroids and diseases of the bones is not definitely known. Ewing⁵ discusses the varieties of cells present in parathyroid tumors and says that they have somewhat the appearance of normal parathyroid tissue. The writer is of the opinion that a close association exists between hyperparathyroidism and giant-cell tumors and that at an early date this connection will be fully explained.

The etiology of giant-cell tumors is not definitely known, but they often follow an injury. They usually occur in adoles-

*Thesis submitted to the Faculty of Surgery of the Graduate School of Medicine of the University of Pennsylvania.

cence, or in the early mature years, when the glands of internal secretion are subject to many changes. Apparently they are due to a disturbance in calcium and phosphorus metabolism which alters normal growth. Giant-cell proliferation is favored normally in calcified cartilage or in the temporary bone of deciduous teeth roots and this is the usual location of these tumors. The giant-cells and capillaries in cancellous bone respond to the need for collateral circulation and an actively ossifying or metaphyseal region, if injured or necrosed, will prove fertile ground for such a tumor growth. In addition an imbalance of the calcium metabolism may have a bearing in helping the trauma to begin the giant-cell tumor. Geschicter and Copeland⁶ say that bone cysts and giant-cell tumors are the consequence of the imbalance between osteoclastic proliferation in the medulla and reactive compact bone in the cortex. They also say that there is a pathological relationship among various bone cysts and giant-cell tumors of the long bones and skull, and that this is the formation of new bone from cartilage. Evidently the formation of cysts and brown tumors of the bone is a late result of the action of osteoclasts, possibly influenced by excessive parathyroid secretion. The initial condition may be a tiny space in the bone followed by a hemorrhage into the area, and the organization and growth of granulating tissue.

The clinical course of these tumors is best explained by a typical case. Following some injury to knee, leg or arm, or as a result of a fall, tenderness and swelling are noted and they fail to subside. Massage, baking, violet-ray treatment—all are futile. An x-ray examination will reveal a giant-cell tumor of the affected bone. Aspirational biopsy will verify the diagnosis. Rarefaction of the bone or other plain cysts may be seen in the roentgen-ray plates. Accompanying the condition is muscular weakness and hypotonea. Calcium in the urine is abnormally high, thus accounting in a measure for nephrolithiasis. Calcium stones may be passed as gravel. Blood serum shows an abnormally high calcium content, due to the failure of the bones to act normally as reservoirs for calcium. Thus the calcium is loosened from the bones and as a high saturation point is reached in the serum, it is excreted in

the urine and feces and thus lost to the body. There is a general decalcification of the skeletal tissues, with striking bone changes, and decrease in serum phosphorus due to its over elimination by the kidneys. Hypercalcemia, therefore, affords grounds for suspicion of hyperparathyroidism.

The most diagnostic feature is location near an epiphyseal line; complete covering by a thin bony layer until the later stages; and the peculiar appearance of the roentgenogram. However, Coley⁷ regards it as difficult to make a correct differential diagnosis between giant-cell and malignant tumors; only three out of four diagnoses are correct in his hospital experience. They are often first diagnosed when a fracture reveals their presence. These tumors are rare in the aged and in children, are of slow growth and rarely cause much discomfort. At the junction of the tumor and the shaft there is a well-defined shoulder as revealed by the roentgenogram. Irregular trabeculations are seen in the wall of the tumor. The tumor is sharply circumscribed by being encased in a thin bony shell. The shaft does not continue into the tumor as it does in sarcoma. The general appearance is that of a multicellular cyst. The roentgenogram is, as a rule, adequate and shows a symmetrical dilation of the medullary cavity divided by many septa. The cortex is always sharply defined and does not present a moth-eaten appearance. The tumor is not malignant in that it does not metastasize, but it is locally malignant in the destruction of tissue, the continued growth, and the tendency to recur if treated in an indifferent manner.

Biopsy by means of aspiration has been applied to this condition and may be relied upon in most cases. A careful study of the cortex is made in the roentgenogram, and its thinnest portion chosen. This is pierced by an eighteen-gauge needle after infiltrating the skin with novocain, and the tumor aspirated. A smear is made from the material and diagnosis made at a single session. A giant-cell tumor under the microscope shows the typical stroma of spindle-cells and connective tissue with many giant-cells between, in a rather cellular structure without any mitotic figures (Fig. 1). Necessarily, the diagnosis of such

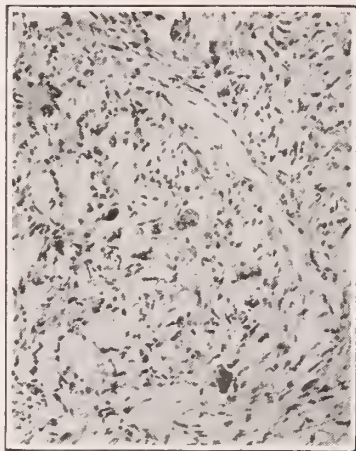


FIG. 1.

Microphotograph of giant-cell tumor.

a bone tumor is a prerequisite for treatment.

The growth responds readily to operation, and if the surgeon is sufficiently thorough the lesion is cured. Recurrences are relatively common and infection of the area is not infrequent. Deformity often follows the extensive surgery, and must be guarded against. When a lesion has progressed too far amputation may be necessary.

Treatment is directed toward cure of the tumor itself and removal of the cause. The most common procedure is to curette the tumor mass, swab out the cavity with some caustic such as zinc chloride, and close without drainage to prevent secondary infection. In order to prevent fracture a circular plaster cast is applied along the length of the limb. In the course of two or three months, the cast may be removed and the patient fitted with properly designed braces if necessary. If the knee has been involved, it will mean a more protracted course for complete repair.

The technique of irradiation has been developed in recent years to a point where good results are assured in most instances. After repeated curettage, the tumor may be transformed into a malignant state, and a larger percentage recur than is supposed—likely twenty-four per cent. Furthermore, each surgical treatment results in marked deformity and a number of cases require resection and bone transplant. A good example of this is described by Herendeen⁸ where a bone graft was used to

replace the loss of bone in the wrist following operation. It is for this reason that patience and cautious irradiation are advised. This measure is not utilized to the extent which its good results would justify, so it is here given in some detail. There is an average of from eight to ten treatments first, three to seven days apart—well spaced to permit recovery from erythema. The low-voltage technique calls for one hundred and forty kilowatts, four milliamperes, four millimeter aluminum filter, twelve-inch target distance, twelve to fifteen minutes exposure and six weeks to two months between treatments. Satisfactory ossification is brought about unless one is dealing with true sarcoma.

The technique of irradiation employed by Pfahler and Parry⁹ calls for high-voltage roentgen rays, filtered through .5 mm. of copper at a distance of fifty cm., twenty-five per cent erythema doses being given successively through one, two, three, or four fields of entry. A giant-cell tumor, clearly diagnosed, does not require irradiation more than three times a week; but in case of doubt, the treatment is given each day until the tumor area is given a one hundred per cent, skin erythema dose, according to the saturation technique employed by Pfahler. Ample time should be allowed between courses of treatment, for instance, permitting an interval of six weeks and then restudying the case and gauging the treatment accordingly.

The spine, skull, pelvis, patella and os calcis are also locations for these tumors. In three per cent of the reported cases there is a tumor of the spinal bones. A case reported by Cotton¹⁰ showed bone destruction of the left part of the fifth lumbar vertebra. Diagnosis here is quite difficult and requires the aid of clinical history, of physical, laboratory and x-ray examinations, plus operation and examination of the removed tissue. Treatment in this area is hampered by surrounding tissues and is best accomplished by careful curettage and irradiation.

Tumors of the patella have been reported and are of interest because it is a sesamoid bone. It has been reasoned that all giant-cell tumors of the tendons are preceded by a sesamoid bone.

Another relatively common tumor of

this type is known as epulis and has every appearance of being identical with the other giant-cell tumors. Scudder¹¹ says that local causes are recognized as important in its etiology. Along these are carious teeth, and possibly the trauma inflicted upon bone by erupting teeth. This tumor responds to the measures already outlined, except in occasional instances, when the jaw bone should be notched on either side of the tooth and the entire base of the tooth removed. These tumors may be of enormous size; one mentioned by Scudder grew so large that the nose and face were covered.

The treatment aimed at the cause of the condition is parathyroidectomy. Most of the cases in which operation has been done had some parathyroid tumor. The operation is quite difficult as the parathyroids have about the same color and consistency as fat, and numerous operations have been disappointing, in that the parathyroids have no certain location or number. If the gland is found and part or all of it removed according to the judgment of the operator, then the case must be guarded against tetany. Non-operative treatment has met with some success and consists in a diet high in calcium and courses of viosterol.

A few typical case reports selected from

the literature are instructive, and show the recently found relation between hyperparathyroidism and bone cysts.

In 1922 Straugh¹² removed from the neck of a woman who died after an attack of puerperal osteomalacia, a tumor 4.5x3.2x3.5 cm., which consisted of pale rose-colored cells, eosinophile cells, and other normal elements. He thought that the tumor growth was the result rather than the cause of osteomalacia. Brown¹³ has recently found five tumors of the jaw which were associated with hyperparathyroidism. Several cases noted by Churchill and Cope¹⁴ demonstrate the relation between the glandular disturbances and bone growth. A woman, aged fifty-three years, from 1920 to 1932, had pain in her legs and a disturbance of gait. In 1929, a giant-cell tumor of the upper jaw was operated upon, and later a second tumor in the nose was curetted. X-ray films showed extensive decalcification of the skeleton, and cyst formation. The thyroid was enlarged and behind the left upper pole there was found a parathyroid tumor in two parts, one weighing 3.85 grams and the other 1.2 grams. Extreme decalcification was treated by means of high-calcium diet and viosterol. Following the total resection of the tumor the calcium and phosphorus metabolism returned



FIG. 2.



FIG. 3.



FIG. 4.

Photographs of giant-cell tumor of leg after amputation.

to normal after some evidence of tetany. A second case cited is that of a woman of forty-six years, who had a swelling on the right side of her neck. Biopsy from the right ulna revealed a giant-cell tumor. Increasing numbness and pain were present in the legs. Generalized osteitis fibrosa cystica was noted and the presence of a benign tumor of the parathyroid suspected. At operation the tumor removed from the parathyroid weighed 53.2 grams. A third woman, forty-four years of age, was having pain in her right hip. Roentgenograms disclosed extensive decalcification of the skeleton. Treatment by high-calcium diet caused an improvement of symptoms.

The following two cases are taken from the record of the Rutherford Hospital, Rutherfordton, North Carolina. The first is of interest because of its enormous size and the length of time that was allowed to pass before treatment was permitted, and the second because of the fact that roentgen-ray pictures are available both before and after the tumor was diagnosed.

Case 1: The first case is that of a girl who came to the hospital in 1925 at the age of nineteen years. She gave the history of having fallen and hurt her knee, which had been sore and swollen for some time. After an examination it was thought to be osteomyelitis and operation advised and refused. She was next admitted to the North Carolina Orthopaedic Hospital in March 1927, with a diagnosis of giant-cell tumor. At that time the upper tibia and

apparently the knee joint was involved in a great irregular soft mass. Amputation was advised and refused. She was again admitted in November, 1933, after having been married for a year. For the past year the mass had been necrotic and discharging a thin fluid with an unpleasant odor. The mass was enormous and completely incapacitated her (*Figs. 2, 3 and 4*). The patient's condition was poor—temperature 102, hemoglobin forty per cent, white blood count 18,500, weak and dehydrated. Amputation, advised as giving her a chance for life, was reluctantly accepted and done the next day along with blood transfusion. After two weeks of a somewhat stormy convalescence she was dismissed with a well healed stump. She has refused further blood examination, or to return to the hospital for any reason. A physical examination does not reveal any signs of a parathyroid tumor. It would be interesting in view of this woman's prolonged illness to know the phosphorus and calcium content of the blood. It can readily be seen from the x-ray picture shown in the illustration (*Fig. 5*) that the bones appear thin and decalcified, but this may be an atrophy due to the lack of use.

Case 2: Married woman, aged thirty-eight, admitted in 1924 with a chief complaint of the fracture of the neck of the left femur (*Fig. 6*). After two months she was dismissed and in a short time was able to walk. She was again admitted in January 1930 with the same complaint.



FIG. 5.

Roentgenogram of giant-cell tumor of knee.
Photographed on Fig. 2, 3 and 4.

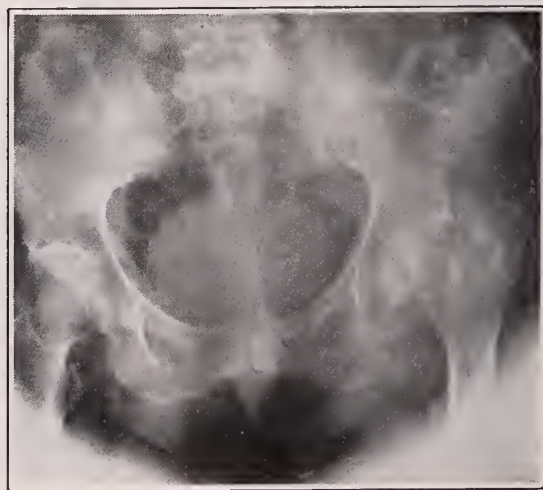


FIG. 6.

Fracture of the neck of femur of Mrs. R. W. McB.

Roentgenograms (*Fig. 7*) revealed a large cyst at the site of the fracture. She was again put in a spica cast and the cast removed in two months. Roentgenograms at the time showed good alignment of the fragments and some new bone. In August, 1932, the cyst was markedly increased in size and she finally consented to operation, which was done by Dr. O. L. Miller of Charlotte. The bony shell being absent



FIG. 7.

Mrs. R. W. McB., six years later showing fracture occurring in same site as *Fig. 6* and giant-cell tumor.

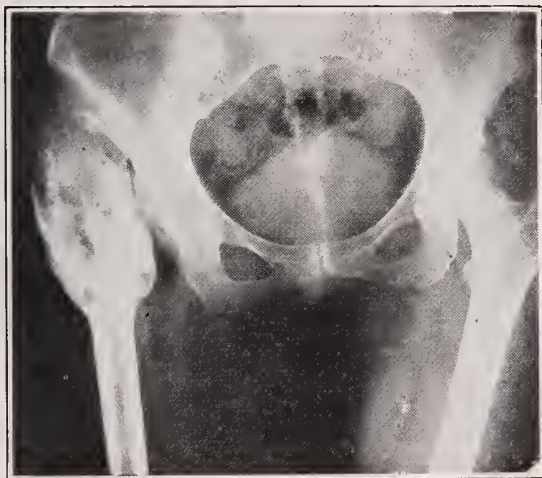


FIG. 8.

Mrs. R. W. McB., three years later after two operations.

over a portion of the tumor, it was readily curetted and emptied of a hemorrhagic jelly-like material. The eggshell-like wall was then collapsed with a thrust of the hand and a snug-fitting bandage applied. The course of the tumor was followed from time to time by roentgenograms and as it continued to enlarge it was again decided to operate in 1933 (*Fig. 8*). The cyst was again emptied and the cavity swabbed out with a caustic. Healing of the wound was slow, a secondary infection developed, and the prognosis for a cure is rather small. No blood work is available on this woman, and no tumor is palpable about the thyroid region. The pathological report has constantly been giant-cell tumor.

CONCLUSIONS

Geschicter and Copeland¹⁵ believe that these tumors have their origin in the action of osteoclasts upon cartilage, when the cartilage is broken down for the formation of permanent bone. However, if this were true the defect should be there from an early age. No such defect can be seen in the picture taken for the diagnosis of the simple fracture (*Fig. 6*). This theory implies that when the tumor broke away from the bony covering it would become changed or cease growing. That this is not true can be seen from *Case 1*, in which the tumor grew beyond its bony confines (*Figs. 2, 3 and 4*).

Martland¹⁶ says, "I am of the opinion that the so-called benign giant-cell tumor is entirely an inflammatory process in the nature of exuberant granulation tissue." In an attempt to correlate the preceding facts it seems obvious to the writer that two factors must be concerned in the development of a giant-cell tumor. It is readily seen that because hyperparathyroidism exists, a giant-cell tumor does not necessarily follow. It is also seen that an injury alone does not always produce a giant-cell tumor. However, an injury plus hyperparathyroidism will likely produce a giant-cell tumor.

These two factors produce a giant-cell tumor because the bone is already rarefied and the injury causes a hemorrhage in that space. The hemorrhage organizes and forms granulation tissue. This tissue proliferates, and so continues as "proud flesh" or as granulation tissue, does, upon cer-

tain occasions upon the surface. The granulation tissue presses upon the walls and they expand, and where bone is being destroyed giant-cells are always present. The giant-cells are likely nothing but a group of the tumor cells grouped together, the better to digest the bone.

The idea that giant-cell tumors are simply granulation tissue modified by confined hemorrhage is supported by the following points:

1. The two are similar in appearance microscopically and macroscopically.
2. Both respond to cauterization.
3. Irradiation will slow or completely inhibit the growth of either.
4. Operative removal in either case will result in a cure.
5. Both have a tendency to recur if treated indifferently.

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Importance of Heat in Gynecologic Therapeutics*

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From time immemorial the use of heat for the relief of human suffering has been advocated, in one form or another, although methods of application were limited, clinical improvement was appreciated for the relief of pain afforded. Our present understanding of chemical and physiologic principles involved in tissue changes brought about by late modes of heat therapy give this form of treatment scientific dignity. While the different forms of treatment with heat have as their objective the raising of tissue temperature, both locally and systemically to various degrees up to actual carbonization, I desire to call particular attention to the local influence of heat on the female genital and pelvic structures.

As we approach this local problem let

us briefly recall the physiologic and anatomical factors likely to have a bearing on the type of heat indicated. The urethra with its Skene's and other urethral glands, the vagina with Bartholin's glands and rugae, and the cervix with deep racemose glands are natural harborers of infection and most inaccessible to topical application of bacteriacides. Therefore, eradication of these foci of infection must be accomplished with a destructive degree of heat as applied by electrocoagulation or cauterization. Occasionally cure may be effected by the heating of these structures to tolerance, particularly in the purely gonococcic type, as this organism cannot tolerate heat which is just short of tissue destruction. However, the well known tendency of gonococci to acquire new associates puts most of those of considerable duration in the mixed infection class

*Read before a recent meeting of the Doctors Dinner Club, Oklahoma City.

which tends to localize and necessitates destruction of the gland structures above mentioned.

As we think of the higher pelvic structures, we must be mindful of the profuse network of veins about the uterus and the luxuriant supply of lymphatics that extend far out into the broad ligaments and adnexa anastomosing freely with adjacent structures to appreciate how very conducive this is to stasis and metastasis of infection from pelvic outlets, particularly the cervix. The collapsible nature of these channels, unsupported by muscle or other firm tissues, render them impotent to withstand the slightest compression, whether due to swelling or anatomical distortion. Therefore, it is obvious that circulatory disturbances of the pelvic organs, producing congestion with its attendant effusion and exudation, will further narrow the lumen of all vessels through increased tension within the tissue. Moreover, if this swelling continues anemia of these structures will result in great impoverishment of function and finally tissue destruction. It is through this pressure and anemia that the local nerve supply is injured causing pain and tenderness varying in severity from a sense of weight in the pelvis to severe general pelvic pain, often referred to the lumbosacral region or down the thighs. Likewise, this functional impairment produces menstrual anomalies, sterility and finally constitutional debility.

For convenience the gynecological conditions for which heat is indicated may be considered as: those due to acute and chronic infection of the genitalia, lower urinary tract and rectum; those due to passive congestion from displacement and those due to purely functional derangement or remote influences. In the acute infections of any part of the genital tract there is a natural tendency to recovery, but too often there is some residual pathological process that persists indefinitely. The acute infections in these areas are greatly benefitted by heat therapy, although there is some difficulty in application on account of the extreme tenderness of the parts. The chronic cases, however, are not so sensitive and swollen and have a much greater tolerance for the manipulation necessary in applying certain

forms of heat which will be considered. It is these cases, which have always been surgical in nature, in which most can be accomplished; many of them being cured by this simple expedient. In these local congestive states caused by misplacements, of course, one cannot expect to correct the anatomical distortion, but local improvement may be expected from heat applied, through its sedative influence.

In the cases with functional derangement, whether due to local or remote hormonal imbalance, under-development or other impoverished states, the application of heat seems to effect as many cures as any other therapy. Summarily, then, all of these conditions are amenable to therapy designed to improve local circulation.

For all methods of applying heat in gynecological conditions there have been fabulous claims, and merit has been awarded each of them. The pelvic cradle is one of the older methods of applying radiant heat from light bulbs as applied in the treatment of burns. Another form of radiant heat therapy, used principally in gonococcal infections with induction of hyperpyrexia, is the Kettering method which is applied by encasement of the patient in a chamber heated by electric heaters, with a device for circulating the air, capable of raising and maintaining the body temperature to any desired degree. The Elliot treatment which is particularly efficacious in the acute pelvic infections, and highly endorsed by some of the leading clinics, is radiant heat as supplied by circulating hot water through a collapsible bag which conforms to the extended walls of the vagina. The water is pumped through this bag at a given pressure, and the degree of heat maintained at the desired level. This may be given for hours and it is claimed that the temperature of the surrounding structures may be raised several degrees.

Withal, the most important form of heat therapy in the foregoing conditions, and having the widest range of application is diathermy. Diathermy is the production of heat in body tissues for therapeutic purposes by high frequency currents. These currents are applied in three ways: (1) by conventional diathermy operating on a wave range of one hundred to four hundred meters and a frequency of 750,000 to 3,000,000 cycles per second, requiring con-

tact metal electrodes attached to a positive and a negative pole on the instrument while the interposed body tissues act as a conductor to complete the circuit. The resistance of the conductor to the flow of electric current produces heat in the conductor. (2) Radiotherapy, or short wave diathermy, operates on a wave length of twelve to thirty meters, and a frequency of 10,000,000 to 25,000,000 cycles per second with insulated electrodes which do not touch the body but are arranged on opposite sides so that the body comes within a high frequency alternating electric field created by the passage of these radio waves from one electrode to the other. It is assumed that the heat created in the tissues is due to ohmic resistance to the high frequency current or to dielectric losses within the tissues or both. (3) The third method is by electromagnetic induction; a heavy insulated coil from the machine is looped around the part to be treated and the generation of heat brought about by production of eddy currents.

The physiologic effects of diathermy and radiotherapy clinically are similar, although theoretically it appears that radiotherapy would give better distribution of heat to tissues of different density and those containing space. For ease and convenience of application radiotherapy is the method of choice. Likewise, in acute gynecological conditions attended with much tenderness it is more comfortable and pleasing to the patient. It is said to be particularly advantageous in pent up accumulations of pus. However, my observation of the relative merits of the two types of treatment in chronic pelvic conditions leads me to believe that the conventional diathermy is equal if not superior when applied through a vaginal electrode. It is obvious that the short wave instrument is superior in the induction of hyperpyrexia, as it is capable of raising the body temperature several degrees in excess of that produced with diathermy.

Suffice it to say, both produce definite circulatory changes characterized by relaxation of arterial and capillary spasm caused by pain and soreness, as seen in congested tissues. Through this relaxation there is quickening of the blood flow, the lymph channels are relieved of pressure produced by engorged vessels and lymph

drainage improved. The opening up of capillaries with an influx of fresh oxygenated blood raises the oxygen percentage with increased nutritive values. Through the effect of heat there is marked increase in leucocytes and in phagocytosis. Local metabolic processes are increased two or three times, and not least of any, there is relief of pain. There has been much said about the bacteriacidal properties of diathermy, and extravagant claims made for radiotherapy, but little evidence in substantiation. Theoretically and by experimentation with laboratory cultures it has been shown that some organisms are destroyed by radiotherapy while the virulence of others is attenuated. The bacteriacidal effect in the human host might be accounted for by increased defensive action of the tissues, leucocytosis and phagocytosis rather than a thermal effect. Here, as in many other new and valuable forms of therapy there are those who become over enthusiastic in evaluating its merits and lead others into disappointment in anticipation of results not founded upon sound principles. If we are contented to limit the uses of diathermy, or any other therapeutic measure, to conditions in which it has shown undisputed beneficial results founded on sound physiological principles, our good impressions will be more profound and lasting. Again, it stands to reason that a therapeutic agent capable of producing such intense local and systemic effects is also capable of producing harm if not handled with the utmost care and understanding. Therefore, every precaution should be taken in giving these treatments for the patient's comfort and safety. Furthermore, the chronic pelvic conditions in which this therapy is indicated do not respond quickly to any form, including surgery, so that the time element in the cure of these diseases must be stressed to the patient. Many improve over a period of months; although the relief of pain may be prompt, the gradual absorption of inflammatory processes is time consuming. Likewise, those hypomenstrual states, frigidity, sterility, etc., that appear to be due to endocrine or local or systemic nutritional deficiencies require treatment over a period of months, and the prognosis for recovery with this form of treatment is more promising than with that of any other. The contra-indica-

tions to the use of heat of the kinds discussed are pregnancy, menstruation and malignancies with a tendency to bleeding.

I do not use the long wave diathermy in undrained abscess formation because it has been stated to be unsafe, although perusal of literature bearing on this fails to show reports of sufficient experimental work in this field to be conclusive. The satisfying results I have observed over a period of years from the use of diathermy treatment have been so convincing I am inclined to suggest its use for the relief of all other pelvic pains not included in the foregoing discussion. For instance, I have seen severe dysmenorrhea relieved by this treatment alone where there was no demonstrable or objective evidence of pathology.

One last thought is of the rapidity with which the tissue temperature is elevated. If the heating is too rapid muscle contraction occurs and produces a sense of pain

described as aching in character, intensified by continuation of treatment. This defeats the objective of the therapy as well as adding to the fear and discomfort of the patient. Therefore, the heat should be started at a nominal degree and gradually elevated over a period of several minutes to the patient's tolerance, using this as a guide for the amount of heat to be applied rather than going by a milliammeter or some other mechanical device intended to measure the heat supplied. There should never be discomfort from the local application of heat.

In conclusion, I am deeply impressed with the value of heat therapy, particularly the long and short wave diathermy, in the treatment of a great majority of gynecological diseases, and feel that many surgical operations, with sacrifice of pelvic organs, may be postponed or obviated by the intelligent and persistent use of heat therapy.

INFECTIONS AND BURNS*

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During the year of 1935 many articles have appeared in the surgical and medical literature concerning the treatment of infections and burns of all types. There has been nothing published of a startling nature, still, many interesting and important facts have been disclosed.

TREATMENT OF WOUNDS AND INFECTION

In the treatment of wounds of soft parts most men have their own particular pet medication—numerous chemical remedies and artificial light are offered to promote wound sterility and overcome infection.

However, most surgeons will agree that a wound of any magnitude should be treated by a careful mechanical cleansing followed by meticulous surgical excision of all traumatized tissue and closed by primary suture. Minor wounds very often require no suture.

The use of cod liver oil in the treatment of suppurating wounds and burns has received considerable attention, notably from Loehr of Germany, who is its chief proponent. He is of the opinion that cod liver oil is bacteria free, it inhibits the growth of organisms, produces healthy granulation tissue, and stimulates the growth of epithelium. He attributes its effectiveness to vitamins A and B. The use of drains and gauze is contra-indicated. A thick layer of forty per cent cod liver oil in sterile vaseline is applied and the part is immobilized. The wound is dressed each week. There is considerable unpleasant odor associated with this treatment. In my own experience I have found it very useful in osteomyelitis.

GAS GANGRENE

Open wounds, especially if they are caused by explosives or by contamination with the earth or woolen material, should

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warn us to be alert for the signs of anaerobic infection, especially if there be much injury to soft tissues and the blood vessels.

As soon as the wound is dressed or before, a prophylactic dose of antitetanic serum and anti gas gangrene serum should be given. Never use carbolic acid caustics or cautery, because these help prepare the most fertile soil for anaerobic bacteria. It is always well in these cases to do a debridement and institute adequate drainage. Place some of this macerated tissue in a stab agar culture tube and cover with melted agar; incubate, and if gas bacilli infection is present, the agar will be blown out and the cork off, usually in about four hours. This is the quickest test there is for gas gangrene infection and a reliable one.

It might be well to briefly review the symptoms of gas gangrene as we are seeing cases of this type each year and will continue to see them as long as there are automobiles, farms, implements and explosives.

Constitutional signs: Increased pulse rate, temperature, clear intellect, flushing of face. Pain out of proportion to amount of injury, acuteness of intellect. *Locally:* Swelling, with pallor of surrounding tissues; wound has a dirty cream tinted serum, but no pus. An x-ray reveals gas bubbles in the soft tissues. Later, bubbles of gas can be expressed from the wound and crepitation can be felt under the skin. After twenty-four hours the wound is covered by a dirty greenish-gray membrane and there is present the characteristic odor, namely that of mouldy, musty straw, or mousy odor.

I am sorry to say that the use of prophylactic anti gas gangrene serum has not prevented gas gangrene in our cases; however the problem of gas gangrene remains primarily one of prevention. I think some of the lessons we learned during the war are applicable to civil surgery. These are, mainly, careful mechanical cleansing of the wound and surrounding skin by the use of soap and water, benzine and prolonged irrigation of the injured parts with saline solution, followed by meticulous surgical excision of all traumatized tissues. The decision to close a wound primarily

rests upon a number of factors; the character of the terrain or the circumstances under which the injury was sustained, the extent of tissue damage, the degree of tissue loss following wound excision and the degree of skin tension which would follow sutures. The experience of the surgeon is a large item in arriving at such a decision.

Many investigators feel that the toxin produced by anaerobes injures primarily the blood vessels, at first locally and then generally. There is a depression of adrenal function. The death of muscles is due to thrombosis of arteries and veins. The peripheral nerves are affected and the neural changes are related to the characteristic painfulness of the wound.

TREATMENT

Just as soon as a diagnosis can be made, if the wound has not been left open, it should be laid open immediately and irrigated with potassium permanganate solution and wet packs. If it has traveled up the extremity, immediate amputation may be all that will save the patient's life. The stump should be left wide open and no attempt at closure made at this time. The so-called therapeutic serum should be administered profusely. Often blood transfusions may be the deciding factor in the case.

In the January issue, 1936, of *Radiology*, Dr. Jas. F. Kelly of Omaha, Nebraska, reports a very interesting series of some forty cases of gas bacilli infection treated by x-ray therapy, amputation and serum. He reports thirty-four cases involving the extremities, six cases involving the trunk. He shows a mortality rate of seventeen per cent if all cases are included. However, a ten per cent mortality rate is present if those patients who are thought to have died from causes other than gas gangrene are excluded.

There are several interesting facts brought out in this report in regards to radical surgery. In the six cases involving the trunk where no radical surgery was done, and the treatment consisted of x-ray and serum, he reports a mortality of zero. In thirty-four cases of the extremities he reports a mortality of eighteen per cent. In seventeen of this group that had no amputation the mortality was zero. In

eleven that had amputation the mortality was forty-five per cent.

In conclusion Dr. Kelly states that from his experience and statistics, amputation is definitely detrimental to the welfare of the patient having gas gangrene. He also states that one should not be discouraged and think the patient is beyond hope because in many of his cases x-ray was used as the last resort.

It is interesting to note that Dr. Hanchett reports a mortality in gas bacillus infection in the A. E. F. of 48.52 per cent. In civil cases he reports 607 cases with a mortality of 49.7 per cent.

One would judge from this article that a combination of good surgical judgment and x-ray therapy is definitely indicated in gas bacillus infection.

TETANUS

Each year we still have ushered to us cases of tetanus. This, often times, is not the fault of the physician, but may be the fault of the laity or too often, the culprits.

Every punctured wound, or any wound that may have been contaminated with dirt, should receive prophylactic treatment immediately.

The early symptoms consist of hardness and spastic rigidity of the muscles around the wound. These symptoms have been noted days before the tetanic contractions develop. Every minutes delay in treatment increases the mortality.

In an excellent article, Miller and Rogers summarize the present status of the treatment of tetanus. They state that the prophylactic injection of antitoxin (1,500 units) is indicated in cases of deep or puncture wounds that may be contaminated. In usually suspicious cases this should be repeated once or even twice at intervals of ten days. The wound should, when possible, be debrided and kept open. After the onset of tetanus, every effort should be made to conserve the patient's strength by maintenance of nutrition and fluid balance, and by combatting muscle spasms. Some form of amytal is a useful drug for the control of spasms. As soon as the diagnosis is made, serum should be given intravenously and intramuscularly in daily doses of from 20,000 to 80,000 units. Intramuscular injections of calcium

gluconate is a useful drug to alleviate the symptoms of serum sickness. In hypersensitive subjects the process of desensitization must be instituted as soon as possible. There are no theoretical or practical grounds for the recommendation of the intraspinal administration of antitoxin. Serum reactions may be expected in about one-third of all cases treated. The immediate reactions are commonest from two to five days after the initial dose of serum, and the delayed reactions from the tenth to the fifteenth day. There were no fatal reactions encountered in their series. Cole reports nineteen cases with eleven recoveries.

BURNS

For the past ten years the treatment of burns by coagulants has firmly established the principles set forth by Davidson when he introduced tannic acid as an external application in 1925.

Davidson's summary of the advantages of tannic acid holds true for any coagulant, the most popular of which at present seem to be gentian violet and ferric chloride. He summarizes as follows: (1) It lessens toxemia. (2) Is analgesic. (3) Minimized trauma. (4) Conserves body fluids. (5) Limits secondary infection and consequent scar formation. (6) Forms a scaffold for growth of young epithelial cells. Each of these statements remains unchallenged after years of clinical trial.

Hempel-Jorgensen reports in a large series of cases a reduction of mortality from forty per cent to eleven per cent since the use of tannic acid.

In reviewing the literature for the ethiological factors that enter into the mortality of burns one is impressed by the role that infection plays.

There are a number of obvious features which are presented by all patients suffering from large superficial burns.

The first feature to be considered is the primary shock which occurs immediately. This seems to differ in no way from any traumatic or surgical shock. If it is adequately treated and the patient survives, the shock has little to do with the later course of the burn.

Once the patient has recovered from the shock, he is usually fairly comfortable for

the first few hours, regardless of the burn treatment which has been used. Later under most forms of treatment, except some coagulant, the following phenomena can be observed. The burned area becomes edematous, oozes fluid and the patient's blood shows concentration, nevertheless the burn looks clean. The patient has little pain and is not actively ill.

Beginning about the twelfth to the eighteenth hour following the burn, the patient begins to show signs of so-called toxicity and by the end of seventy-two hours the patient has all the characteristics of a violent toxemia. One is impressed with the fact that there is enough obvious infection present on the burned area to account for all the symptoms and physical signs exhibited by the patient.

Toxemia of burns is not caused by concentration of the blood, fluid loss, chemical changes in the blood, or a combination of these factors. Evidence has been brought forward in favor of the view that it is the result of the action of toxins which have been formed at, and absorbed from, the burned area. The main action of the toxins is on the liver cells.

Very little work had been done on the bacteriology of burns until Firor reported his findings. He found that after a twelve-hour period that he could in one hundred per cent of severely burned patients and in a large majority of minor burns, obtain cultures of hemolytic streptococci. The concentrations of these organisms increased as the patient became more toxic. Additional evidence has been obtained by blood cultures and cultures obtained from the heart blood and the lungs in terminal cases.

This investigation has led the way for the use of gentian violet, brilliant green and ferric chloride. These coagulants are potentially more germicidal than tannic acid and they form a more flexible coating so that the presence of infection beneath the eschar is more easily detected.

Gentian violet seems to enjoy the most popularity and has the advantage of being highly bactericidal against the gram positive organisms. It is used in a one per cent solution and sprayed over all burned areas. It produces instantaneous analgesia

and it immediately forms a thin, light eschar, which is tough but flexible.

The treatment of every burn resolves itself into an experiment in bacteriology. The success of the treatment in respect to the salvation of the patient, the freedom from infection, the amount of local or constitutional reaction, the discomforts following the burn, and the nature and severity of all complications depend on the intelligence and constant care and the exercise of sound surgical judgment by the attending surgeon.

Relation of Sanatorium to Treatment of Tuberculosis

LeRoy S. Peters, Albuquerque, N. M. (*Journal A. M. A.*, November 7, 1936), reasserts that Dr. Trudeau's experiment in the Saranac Lake section started the country on a sanatorium-building period which ultimately placed sanatoriums in practically every state in the union. In the early days the sanatorium treatment consisted of rest, good food, fresh air and expert supervision. There was little else to offer the patient. The progress of the disease had to be watched and the prognosis given by what the clinician could gather from physical examination and clinical symptoms alone. The advent of the x-rays and the various laboratory tests for determining activity and the progress in general were yet to come. Sanatoriums can boast results that were never dreamed of by home treatment, because there is nursing supervision and routine is carefully looked after. Education of the tuberculous is best accomplished in the institutions. There is no more comparison between the sanatorium-educated patient and the home patient than there is between the correspondence school pupil and the student of a recognized university. The one is as handicapped in his fight for continued health as the other in his struggle for economic existence.

Imperforate Anus; Bowel Opening Into Urethra; Hypospadias: Presentation of New Plastic Methods

Hugh H. Young, Baltimore (*Journal A. M. A.*, October 31, 1936), reports a case of hypospadias and imperforate anus in which the intestine was connected with the deep urethra, or urogenital sinus, through which liquid feces escaped for eighteen months. The patient had worn a colostomy cup for fifteen years. The anal sphincter, although inactive for seventeen years, was visible in normal position beneath the skin. A series of operations was planned and carried out (1) to straighten the penis and complete the urethra to the glans, (2) to separate the rectum from the urinary tract and bring it out through the anal sphincter after forming a new anus and (3) to close the colostomy and anastomose the previously separated ends of the intestine. It was possible to cure the congenital chordee and hypospadias and make a good urethra, transplant the rectum, bring it out through the sphincter in a newly made anal orifice, close the colostomy, anastomose the ends of the intestine and thus obtain normal defecation and urination. The rectum and anal sphincter, after years of disuse, soon began to function normally.

CONGENITAL CYSTS

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In 1925, Koontz reported a case of congenital cyst of the lung in the Bulletin of the Johns Hopkins Hospital and also collected one hundred and eight other cases from the literature up to that time. In 1934, Woods reported sixteen cases observed in the Mayo Clinic and found records of twenty-three additional cases in American and English literature since Koontz' report of 1925. Pearson reported eight cases in the Illinois Medical Journal of 1935 and estimated that the total number of cases recorded in the more readily available literature up to 1925 as one hundred and seventy-two.

In July, 1936, Kirlin reported four additional cases, observed in the Mayo Clinic, in the Journal of Roentgenology. He also found that since Koontz' report of 1925 there had appeared in literature an additional seventy-eight cases observed by the roentgen ray, and six additional found at necropsy, or eighty-four cases.

It is our purpose to report two cases observed in the Oklahoma City Clinic-Wesley Hospital in the past two years. No attempt will be made to review the literature or make comments on this condition from either the clinical or roentgenological standpoints as the roentgenologic manifestations are well described by Woods in the Journal of A. M. A., 1934. Articles by E. F. Pearson and case reports by L. J. Moorman give a good account of this condition.

Case 1. Male, age thirty-one, came to the Clinic in June, 1935, because of a slight hacking cough and spitting up of blood which was first noted about a week previously. This came on rather unexpectedly one morning and he continued to spit up blood for an hour. The next morning he did the same thing and has been spitting up some blood daily since then, but never very much at a time.

He has had a slight cough for six months. The cough is slightly productive of muco-

purulent material. He has had no fever to his knowledge and no night sweats. He states he has lost fifteen pounds in weight but attributes this and some weakness he has had to an attack of mumps three weeks ago complicated by bilateral orchitis, from which he has not fully recovered.

Physical Examination: Pulse 104. Temperature 98.8°. Blood pressure 112/60. Chest examination was negative except for some rales at the left base posteriorly.

Roentgen examination shows both apices clear. The entire right lung field is clear. There is some increase in the bronchovascular markings on both sides, most marked on the left side. Two large, elliptical shaped, ring-like shadows are noted towards the left base. These are about the size of a large hen's egg. One of these partially overlapped the cardiac shadow and had a dense shadow covering about one-third of the ring-like shadow, with straight upper horizontal margin indicating fluid level. Several smaller ring-like shadows in the region of the right hilus were noted.

Lateral view showed rather dense shadows at the base of the hilus shadow. One ring-like shadow partially filled with fluid was easily recognizable.

After lipiodol injection the entire right bronchial tree was normal. The left bronchial tree did not show the lipiodol in any of the ring-like shadows but rather the bronchial tree runs to the medial side of these shadow areas. One shadow area the size of the tip of the little finger might be interpreted as a bronchial dilatation; otherwise no indication of bronchiectasis was noted.

Case 2. Boy, age six. He had had measles, whooping cough and mumps, with good recoveries. There was no cough whatever until the onset of the present trouble.

Present Illness: The patient took sick one month ago with headache, general malaise, and fever ranging from 102 to 106°. About one week ago he began cough-

ing but did not raise any sputum until three days ago. Three days ago he coughed up a half teacupful of pus. This was repeated yesterday and again today.

Chest Examination: Shows decreased expansion on the right. The dullness extends from the base practically to the level of the clavicle anteriorly, and x-ray at this time showed a dense shadow of the entire lower right chest up to the level of the fourth rib anteriorly, with a sharply demarcated upper margin, indicating fluid level. A small area of pneumothorax is noted above this dense shadow area. The heart is not pushed to the left. There is no displacement of the mediastinal shadows. The lateral view shows the abscess cavity to lie just anterior to the midline, extending forward about one and one-half inches. The lower level of the fluid or abscess is about one and one-half inches above the diaphragm.

On May 12, 1936, x-ray showed the right base to be clear; several large ring-like shadows are noted which extend from the level of the fifth rib anteriorly to the level of the clavicle. Three rather distinct, ring-like shadows are noted. The left hilus has a dense shadow about the size of a penny.

This was the first time that it was suspected the lung abscess was on the basis of a congenital cystic lung.

On May 29, 1936, x-ray of the chest showed practically the same condition. The pneumothorax was noted towards the lateral periphery of the chest.

On June 23, 1936, x-ray showed three spherical ring-like shadows as previously noted. There were no shadows indicating fluid accumulation. Some pneumothorax was still present.

During all this time postural drainage had been continued. The child was free of temperature. Drainage has gradually become less until it has practically ceased. The conclusions in this case were that we were dealing with a lung abscess superimposed on a congenital cystic lung condition.

Gonococcic Endocarditis: Report of Case With Positive Blood Culture

Isidor Cohn's, Brooklyn (Journal A. M. A., November 14, 1936), case of gonorrheal endocarditis illustrates the difficulties often encountered in arriving at a diagnosis. In fact, were it not for the

positive blood culture, in itself a rather rare observation, the diagnosis could not have been made, for there was no history nor anatomic evidence of gonorrhea except possibly the enlarged prostate and seminal vesicle. The positive complement fixation was contradicted by the equally positive Widal, so that the serologic reactions only confused the clinical picture, and the postmortem examination, while confirming the clinical diagnosis of ulcerative endocarditis, gave no hint of etiology. There was no evidence of previous cardiac damage or defect, so that this is one of those exceptional cases in which gonococci, invading the blood stream, have caused inflammation of a normal endocardium. Although the demonstration of gonococci in the valve would have been further evidence in this case, the failure to do so is explained by the fact that no active search was made for them until after the report of the last blood culture, by which time these fragile organisms could readily have been replaced by the secondary invaders found on culture—*Bacillus coli* and *Staphylococcus aureus*. The case illustrates the importance of repeated blood cultures, and it is interesting that growth was finally obtained on ordinary Savita agar and bouillon, after failure with special media.

Physiologic Effects of Correction of Faulty Posture

Louis B. Laplace and Jesse T. Nicholson, Philadelphia (Journal A. M. A., September 26, 1936), state that twenty-six subjects having postural defects of the kypholordotic type were studied with respect to the physiologic changes produced by the correction of their faulty posture. The immediate effects were in general entirely comparable to those observed after one year of corrective exercises. In the corrected posture the diaphragm was not always relatively elevated as is generally believed, nor was the heart always more transversely placed. The diaphragmatic excursions were either increased or decreased, for reasons that are discussed. The vital capacity was generally increased although flexibility of posture was requisite for optimum results. Oxygen consumption was variable. Pulmonary ventilation was generally increased. Circulatory efficiency, as judged by constancy of blood pressure and pulse rate, was generally improved; in two cases the correction of posture was able to prevent hypostatic congestion and syncope. It was concluded that the results of correcting faulty posture differ widely between individuals, irrespective of the grade of defect. A correct posture appears to be an appreciable advantage to circulatory and respiratory function in the majority of persons, but in some a postural defect may be a compensatory mechanism which it is inadvisable to disturb. The therapeutic application of postural correction should be made according to the requirements of the individual case and only after an attempt to determine in what posture the individual is functionally most efficient.

**YOUR MEMBERSHIP EXPIRES
DECEMBER 31st, 1936.**

THE JOURNAL

OF THE

Oklahoma State Medical Association

Issued Monthly at McAlester, Oklahoma, under direction of the Council.

VOL. XXIX DECEMBER, 1936 Number 12

DR. L. S. WILLOUR.....Editor-in-Chief
McAlester, Oklahoma

DR. T. H. McCARLEY.....Associate Editor
McAlester, Oklahoma

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Reprints of original articles will be supplied at actual cost provided for them is attached to manuscripts or made in sufficient time before publication.

Articles sent this Journal for publication and all those read at the annual meetings of the State Association are the sole property of this Journal. The Journal relies on each individual contributor's strict adherence to this well-known rule of medical journalism. In the event an article sent this Journal for publication is published before appearance in The Journal the manuscript will be returned to the writer.

Failure to receive The Journal should call for immediate notification of the Editor, McAlester Clinic, McAlester, Oklahoma.

Local news of possible interest to the medical profession, notes on removals, changes of addresses, births, deaths and weddings will be gratefully received.

Advertising of articles, drugs or compounds unapproved by the Council on Pharmacy of the A. M. A., will not be accepted.

Advertising rates will be supplied on application.

It is suggested that wherever possible members of the State Association should patronize our advertisers in preference to others as a matter of fair reciprocity.

Printed by News-Capital Company, McAlester.

EDITORIAL

CHICAGO CONFERENCE OF SECRETARIES-EDITORS

The Secretaries-Editors of the Constituent State Medical Associations were the guests of the American Medical Association at a conference held in the new Association Building in Chicago, November 16th and 17th.

The first thing observed by all in attendance was the wonderful new building which has been recently remodeled throughout and is now one of the most attractive and serviceable office buildings in Chicago. The meeting was held on the ninth floor of this building and was called to order by Dr. Rock Sleyster, Chairman of the Board of Trustees. Addresses were made by Dr. Charles Gordon Heyd, Presi-

dent, and Dr. J. H. J. Upham, President-Elect, in which matters of importance to Organized Medicine were discussed.

Basic Science Laws were discussed by Mr. J. W. Holloway of the Bureau of Legal Medicine and Legislation, and as soon as the Bulletin is issued containing this address an abstract will be published in our JOURNAL. There were many points of vital interest to us at this time in Mr. Holloway's address.

The Michigan Filter System was discussed by Dr. L. Fernald Foster, Secretary of the Michigan State Medical Society. This subject was brought to your attention as an editorial in the last issue of our JOURNAL and from the reports of its operation in Michigan it would appear that it might well be adopted throughout Oklahoma.

The Public Health League of California was discussed by Dr. Glenn Myers of Los Angeles, and he told the advantages of this League. The membership is composed of doctors, dentists, nurses and pharmacists, and through the League wonderful political strength is being developed in the state.

The addresses by Dr. Thomas Parran, Surgeon General United States Public Health Service, and Miss Katherine F. Lenroot, Chief, Children's Bureau, United States Department of Labor, showed the tendency of the present Social Service Act to lead us into a system of social medicine unless organized medicine carefully guards itself against any further development along this line. Surgeon General Parran made the out-and-out statement that he is opposed to socialized medicine and we hope that his administration will bear out this statement.

Next came the discussion on the Preparation of Manuscripts and Illustrations, by Dr. Richard M. Hewitt, Rochester, Minn., which we all hope may reach the authors who present material to the various medical journals for publication.

The Dinner Conference was presided over by Dr. Holman Taylor, Secretary-Editor, State Medical Association of Texas, and many subjects of interest to editors were discussed. Dr. Taylor also told us, by the way, "that a microphone is just like a cuspidor—unless you hit it, it 'ain't' worth a damn."

The subject of Insurance Against Malpractice was presented by Mr. Thomas V. McDavitt, Bureau of Legal Medicine and Legislation, and was discussed at length by Dr. Charles Gordon Heyd, in which he described in detail the plan in operation in the state of New York.

These two discussions took practically all of the time of the morning session on Tuesday and were most interesting and instructive. No doubt the Bulletin will contain much of this material.

The State Societies received many excellent suggestions as to material for Scientific Exhibits at Annual Meetings in a discussion of the subject by Dr. Thomas G. Hull, Director Bureau of Exhibits, American Medical Association.

In all, the program, to me, appeared to be the most beneficial of any presented since I have been attending these conferences and the very hearty and cordial welcome by the officers of the American Medical Association was appreciated by all in attendance.

OKLAHOMA CITY CLINICAL CONFERENCE

Inasmuch as the November JOURNAL had gone to press before the meeting of the Oklahoma City Clinical Conference was held, October 26th to 29th, it was impossible for us to comment on this meeting in that issue.

The Conference this year was without question the best ever held. There were over six hundred physicians registered from Oklahoma and other southwestern states. The officers and members of this Society are to be congratulated on the talented speakers that they make available to the profession of Oklahoma and the Southwest.

More power to this organization—we want the opportunity to attend each year.

THE COUNCIL

At a called meeting of the Council of the Oklahoma State Medical Association, held at the Skirvin Hotel, Oklahoma City, Sunday, November 8, 1936, the following members were present: Doctors Fulton,

Templin, Speed, Livermore, Walker, McNeill and Willour.

The meeting was called to order by Dr. Fulton, and the object of the meeting presented by Dr. Speed, who informed the Council that they had been called in session to consider a proposal from Dr. R. C. Williams, whereby medical service would be furnished clients of the Resettlement Administration, and Dr. Williams was asked to present his subject.

Dr. Williams, who for twenty years has been a commissioned officer of the U. S. Public Health Department, and now is Medical Director of the Resettlement Administration, explained that the Resettlement Administration is making, to tenant farmers, small loans averaging \$305.00 per year with which they can feed their families, their stock, buy seed, *et cetera*; in other words, meeting their expenses until they can make a crop. Of course, from this amount it would be impossible for them to pay medical or hospital fees and the Resettlement Administration is willing to make additional loans for medical care but would only be able to guarantee a small fee.

Dr. Williams stated that there are 23,000 families in Oklahoma that are clients of the Resettlement Administration and that this plan is in effect in six counties in Western Oklahoma and has been working satisfactorily since July.

After his explanation the following resolution was presented:

BE IT RESOLVED, That the Council of the Oklahoma State Medical Association endorse to its component County Societies the plan of the Resettlement Administration in procuring medical care for their clients and dependents in which a maximum amount is guaranteed by the Resettlement Administration, funds being available, the schedule of these amounts (which is attached) is the amount guaranteed but not the amount of charges made. This guarantee when paid will constitute the payment in full for service rendered in the particular case. No County Society or member thereof is in any way obligated to accept this arrangement except by its individual action. This en-

dorsement to apply for a period of one year.

On motion of Dr. McNeill, seconded by Dr. Speed, the above resolution was unanimously adopted.

The Council was then asked to appoint a committee of three to serve as Advisory Committee. The following were appointed: Drs. McLain Rogers, H. K. Speed and J. S. Fulton.

Dr. Williams also requested that a Review Committee be appointed in each county to review all cases in which there may be a dispute relative to fees.

The following *Schedule of Amounts Guaranteed* was presented:

Town Visits	\$ 1.50
Town Visits at Night	2.00
Office Visits	1.00
Obstetrics in Town	15.00
Obstetrics in Country (plus mileage)	15.00
Visits in Country (plus mileage)	2.00
Mileage (per mile each way)20

FRACTURES

Skull	\$25.00
Jaw	12.50
Humerus	25.00
Radius	15.00
Ulna	10.00
Radius and Ulna	25.00
Pelvis	35.00
Femur	40.00
Tibia	17.50
Fibula	15.00
Tibia and Fibula	25.00
Fingers	5.00
Toes	5.00
Clavicle	20.00

X-RAY

Plates (each)	\$ 3.00
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OPERATIONS

Major	\$35.00
Minor	15.00
Tonsillectomies	15.00

ANAESTHESIA

General or Spinal	\$ 5.00
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AMPUTATIONS

Major	\$35.00
Minor	15.00

LABORATORY

White Count and Differential	\$ 1.50
Urinalysis	1.00
Red Count and Hemoglobin	1.50

Coagulation and Bleeding Time	1.00
Complete	2.50

HOSPITALIZATION

Rate per Day	\$ 2.25
Operating Room for Major	10.00
Operating Room for Minor	5.00
For unusual medicine, such as glucose, biologicals, <i>et cetera</i>	Actual Cost
For unusual dressings	Actual Cost

On motion of Dr. Templin, seconded by Dr. Livermore, the above schedule was approved.

On motion duly seconded the Council adjourned.

L. S. WILLOUR,
Secretary-Treasurer.

FORMAL PROTEST

Below is published, at the request of Dr. Philip McNeill, a letter which was received from him. It is apparent from the letter that Dr. McNeill did not completely understand the Resolution which he made a motion to adopt. However, he is mistaken as to there being any change made in the resolution after his motion was presented.

I am very sorry that there seems to be any misunderstanding about the matter, but I feel Dr. McNeill's position should be squarely presented to the profession of the state. His letter follows:

Dear Dr. Willour:

Pursuant to our telephone conversation I am, for the following reasons, registering a formal protest against the resolution adopted by the Council of the Oklahoma State Medical Association on November the 8th, 1936:

First: The motion for the adoption of the resolution was made by me.

Second: The resolution as printed was not the resolution which was proposed, inasmuch as the sentence in parentheses "which is attached" was not included in the original resolution.

Third: I have been instructed by the Counties which I represent to demand that there be no schedule of fees nor any schedule whereby money is mentioned.

It is my belief that this is a dangerous

proceeding for the Council of the Oklahoma State Medical Association to attempt without a meeting of the House of Delegates of the State Association. This is definitely a step towards State Medicine and the Counties in my district are definitely opposed to State Medicine.

Very truly yours,

Philip M. McNeill, M.D.

Editorial Notes—Personal and General

DOCTORS CHARLES ED WHITE, I. B. OLDHAM, JR., and SHADE D. NEELY, Muskogee, attended the meeting of the Southern Medical Association in Baltimore, in November.

DR. and MRS. F. L. CARSON, Shawnee, have returned home after an extensive visit to eastern states, including a hunting trip in northern Canada. Dr. Carson attended the meeting of the American College of Surgeons in Philadelphia before his return.

DR. V. M. RUTHERFORD, Woodward, has been appointed County Health Superintendent of Woodward County, effective November 16th, 1936.

DR. and MRS. A. M. McMAHAN of Duncan, Oklahoma, spent two weeks in Baltimore where Dr. McMahan attended the Southern Medical Association meeting.

LT. COL. E. ALBERT AISENSTADT, Medical Reserve, recently returned from Rochester, Minnesota, where with a number of other Oklahoma reserve officers, he attended the eighth annual session of the inactive training unit, U. S. army, and navy reserve officers at the Mayo Foundation, Rochester, Minnesota, held between October 4 and 17, 1936, inclusive.

"Is This Product Council-Accepted"

This is the first question many physicians ask the detail man, when a new product is presented.

If the detail man answers, "No," the doctor saves time by saying, "Come around again when the Council accepts your product."

If the detail man answers, "Yes," the doctor knows that the composition of the product has been carefully verified, and that members of the Council have scrutinized the label, weighed the evidence, checked the claims, and agreed that the product merits the confidence of the physician. The doctor can ask his own questions, and make his own decision about using the product, but not only has he saved himself a vast amount of time but he has derived the benefit of a fearless, expert, fact-finding body whose sole function is to protect him and his patient.

No one physician, even if he were qualified, could afford to devote so much time and study to every new product. His Council renders this service for him, freely. Nowhere else in the world is there a group that performs the function so ably served by the Council on Pharmacy and Chemistry and the Council on Foods.

Mead Johnson & Company cooperates with both Councils, not because we have to but because we want to. Our detail men can always answer you, "Yes, this Mead Product IS Council-Accepted."

LEGISLATIVE FUND

County	Allotment	Amt. Paid
Adair	\$ 40.00	
Alfalfa	70.00	
Atoka-Coal	30.00	\$ 10.00
Beckham	140.00	130.00
Blaine	90.00	
Bryan	240.00	140.00
Caddo	240.00	90.00
Canadian	230.00	75.00
Carter	260.00	110.00
Cherokee	30.00	
Choctaw	70.00	60.00
Cleveland	270.00	
Comanche	190.00	
Cotton	90.00	
Craig	150.00	80.00
Creek	330.00	185.00
Custer	230.00	210.00
Garfield	420.00	250.00
Garvin	150.00	150.00
Grady	230.00	160.00
Grant	40.00	
Greer	110.00	
Harmon	80.00	
Haskell	60.00	40.00
Hughes	170.00	130.00
Jackson	160.00	120.00
Jefferson	110.00	
Johnston	10.00	
Kay	320.00	280.00
Kingfisher	90.00	
Kiowa	170.00	
Latimer	40.00	
LeFlore	160.00	100.00
Lincoln	150.00	50.00
Logan	200.00	100.00
Major	30.00	
Marshall	50.00	
Mayes	110.00	20.00
McClain	60.00	
McCurtain	70.00	
McIntosh	60.00	50.00
Murray	110.00	
Muskogee	520.00	30.00
Noble	40.00	
Nowata	50.00	50.00
Okfuskee	150.00	100.00
Oklahoma	2740.00	1060.00
Oklmulgee	280.00	210.00
Osage	220.00	140.00
Ottawa	310.00	
Pawnee	100.00	90.00
Payne	250.00	160.00
Pittsburg	350.00	180.00
Pontotoc	300.00	300.00
Pottawatomie	330.00	160.00
Pushmataha	75.00	30.00
Rogers	120.00	60.00
Seminole	320.00	110.00
Sequoyah	10.00	
Stephens	220.00	60.00
Texas	50.00	20.00
Tillman	100.00	110.00
Tulsa	1980.00	
Wagoner	40.00	
Washington	250.00	240.00
Washita	120.00	
Woods	190.00	140.00
Woodward	260.00	140.00

NOTE—Corrections and additions to the above list will be appreciated.

News of the County Medical Societies

DR. HENRY S. BROWNE and DR. JOSEPH FULCHER of Tulsa addressed the Craig County Medical Society Tuesday evening, November 10th, on the subject of Genito-Urinary Diseases.

At the November meeting of the Logan County Medical Society at the Ione Hotel in Guthrie, Dr. Hervey Foerster, of Oklahoma City, gave a paper on "Common Skin Diseases" with lantern slides. Dr. Anson Clark, of Oklahoma City, gave a paper on Mandelic Acid Treatment in Urinary Tract Infections.

News Notes of Woman's Auxiliary

Our aim to have "Every Doctor's Wife an Auxiliary Member" has already been carried out one hundred per cent in some of our units and we are hoping all will reach that goal. Tulsa reported every eligible member contacted before the first meeting this fall with a paid membership of one hundred and forty-three, a gain of fifty-eight members over past year. Cleveland reports one hundred per cent of eligible members.

Our slogan this year is, "Know Your Auxiliary—Be An Informed Member." Through publication in the State Journal and mimeographed circulars we are learning who's who in the County, State, Southern and National auxiliaries. Many units are stressing self-education through study programs.

We are urging each unit to compile complete histories of their respective organizations in an attractive form to be displayed at convention. We are also asking for interesting biographies of prominent physicians in our State history, old documents, instruments, pictures, etc., of historical importance to be displayed also.

Suggestive lists of leisure reading books pertaining to medicine sent to members incurred favorable comment and inquiry.

Our Public Relations and Health Chairmen are stressing more intensive programs in schools and clubs. All units are cooperating in many ways. One unit is sponsoring a health poster contest, another an essay contest, and still another helps with debates in schools, scrap books, clothing, magazines and other contributions are being given hospitals. Some prefer to give cash donations to the various charitable organizations.

The honor points in our merit system for awarding the Silver Tea Tray, purchased at the convention to be given the unit earning the most honors are being stressed. We hope this will stimulate more interest in auxiliary work in a competitive way. We have also sent out a printed annual report form to be filed with our State Secretary by March 1st. We expect this to serve as sort of an incentive as to possibilities and what we can expect from our units. It will also put reports in the hands of our State officers before convention and help eliminate much time lost in general routine report at convention.

All organizations have enjoyed some social functions during the summer for fellowship is our big objective. In our Woodward Auxiliary representing six counties they report members driving ninety miles to their meetings and seldom missing one. Their members always have joint social meetings with the medical society which means so much since their membership is scattered. Pottawatomie unit has luncheons in connection with their meetings and sometimes do sewing for deserving poor.

Oklahoma unit has just sponsored a very nice program for visiting wives of the Oklahoma Clinical Society.

Garfield and Pittsburg, our new units, are most enthusiastic about their work.

MRS. CHARLES R. RAYBURN, President.

RESOLUTIONS

DR. THERON T. SHACKELFORD

WHEREAS, our fellow member and friend, Dr. Theron T. Shackelford of Haskell, Oklahoma, who was a member of long standing of our Society, has been called from us; and,

WHEREAS, his loss is deeply felt by each and

OBITUARIES

DOCTOR THERON T. SHACKELFORD

Dr. T. T. Shackelford, Haskell, Oklahoma, died October 28, 1936, after a long illness.

He was born in Okolona, Arkansas, January 31, 1886.

Graduating from the Louisville Medical College, at Louisville, Ky., in 1910, he began his practice of medicine in Heavener, Oklahoma, and Foreman, Arkansas. In 1917 he came to Haskell where he resided until the time of his death. During the World War he served as First Lieutenant in the Medical Corps of the Tenth Division.

Dr. Shackelford is survived by his wife and one son.

Interment was in the Haskell cemetery with Masonic services at the graveside.

DOCTOR ALVA JAMES WEEDN

Dr. A. J. Weedn, prominent surgeon of Duncan, died Sunday, November 15th, of a sudden heart attack.

He was born in Independence, Kansas, in 1875. He was educated in public schools and at home, and received his medical degree from a New Jersey medical college in 1901, beginning his practice at McComb, Oklahoma. He later moved to Sasakwa, Oklahoma, where he remained for thirteen years. In the meantime, he did post-graduate work at the University of Chicago and the University of Oklahoma. In 1919 he moved to Duncan where he remained until his death.

Dr. Weedn was a thirty-second degree Mason and a member of the Duncan Rotary Club. He took a very active part in medical affairs of the state throughout his life. He was secretary of the Oklahoma Hospital Association from 1927 to 1931; he was president emeritus of the Southern Oklahoma Medical Association which he helped found in 1929.

Dr. Weedn is survived by his wife and four children, one sister and five brothers.

RECENT DEATHS

(Insufficient data for obituary.)

Dr. Gaines Brightwell, Leedy, November 22, 1936.

every member of this Society and by his legion of lay friends, because in his nineteen years of practice in Haskell in the medical profession he has always exemplified the noblest of virtues in all his relationships; and,

WHEREAS, we join together to mourn the passing to his great reward of this public servant.

THEREFORE, be it resolved by the Muskogee County Medical Society at its regular meeting of November, 1936, that our sincere sympathy be extended to his wife and family.

MUSKOGEE COUNTY MEDICAL SOCIETY,

By C. M. Fullenweider, President.

DOCTOR ALVA J. WEEDN

WHEREAS, on November 15, 1936, death called our fellow physician and member, Dr. Alva J. Weedn, of Duncan, Oklahoma; and,

WHEREAS, we regret, as do a host of friends and colleagues, his death;

THEREFORE, Be it resolved by the Stephens County Medical Society, that we express sincere regrets in his loss and extend heartfelt sympathy to his bereaved family.

FURTHER, Be it resolved, that a copy of these resolutions be sent to the bereaved family and the Journal of the State Medical Association and these resolutions be a part of the permanent record of the Society.

THE STEPHENS COUNTY MEDICAL SOCIETY,

Wallis S. Ivy,

James L. Patterson, Committee.

DOCTOR H. C. LLOYD

WHEREAS, our fellow member and friend, Dr. H. C. Lloyd, of Hobart, Oklahoma, who was a member of long standing in our Society, was called from us on November 16, 1936, and;

WHEREAS, Dr. Lloyd for many years has been a member of this Society and has rendered through it most valuable service to his profession in the county, and has been recognized by the doctors of this county and state as one of the most beloved members of the medical profession.

THEREFORE, BE IT RESOLVED, that we receive this information with deep sorrow and regret, realizing our loss in both counsel and advice, and

BE IT RESOLVED, that we extend to the family our deepest sympathy and assure them of our sincere desire to share with them this burden of loss, and

BE IT FURTHER RESOLVED, that a copy of this resolution be made a part of the minutes of this meeting, that it be published in the Journal of the Oklahoma State Medical Association, and that a copy be sent to the family and to the press of this city.

Signed: J. P. Braun, Secretary-Treasurer.

J. L. Adams, President,

The Relation of Anemia to Pregnancy and Menstruation

The incidence of anemia among normal women of the poor classes in Aberdeen with reference to its relationship to pregnancy and menstruation is reported by Fullerton (British Med. J., Sept. 12, 1936).

The hemoglobin values of 1,534 women were included in the study. When charted by age groups, the non-pregnant women between fifteen and nineteen, at the start of reproductive life, showed an average hemoglobin value of eighty-three per cent

(11.5 g.), fifteen per cent below the Price-Jones average for normal women. In the older groups the hemoglobin level progressively decreased reaching the low of seventy-seven per cent (10.6 g.), twenty-one per cent below normal at age forty to forty-four. After the menopause the hemoglobin rose, since the demands for iron were materially decreased.

The values for pregnant women paralleled those for non-pregnant women, but were approximately five per cent lower. Although the incidence of anemia in non-pregnant women was less than in pregnant women, the number of severe cases, hemoglobin below fifty per cent (6.9 g.), was greater. Blood examinations and therapeutic iron administration showed that the anemia was clearly attributable to iron-deficiency caused by the low iron content of the diet. Thus both pregnant and non-pregnant women were in negative iron balance throughout reproductive life.

A careful investigation into the total iron demands made in pregnancy by the fetus and tissues, by blood loss at parturition and by lactation showed that in many cases pregnancy did not constitute as great an iron demand as did menstruation. Thus normal menstrual blood loss often produces iron-deficiency, and even in the better classes, profuse menstrual blood loss may lead to hypochromic anemia.

It is concluded that anemia has a high incidence among the poor classes of women caused by a combination of poor diet and iron loss during reproductive life. Menstruation apparently constitutes an iron loss at least as great as pregnancy, and diet is often inadequate to meet the iron demands of either.

Cholangiographic Demonstration of Biliary Dys-synergia and Other Obstructive Lesions of Gallbladder and Bile Ducts

R. Russell Best and N. Frederick Hicken, Omaha (Journal A. M. A., November 14, 1936), demonstrated spastic biliary dys-synergia by means of cholangiograms and consider it a definite clinical entity. Glyceryl trinitrate tablets, magnesium sulfate, atropine, belladonna, cream, olive oil and various oily radiopaque substances have very evident therapeutic value at times in spastic dys-synergia. When possible, post-operative irrigation of the common duct with oils and saline solution is of value. Immediate cholangiograms are a definite aid in diagnosis and may prevent complicating circumstances which arise from incision and exploration of the common duct. The status of the cystic duct can also be ascertained. Delayed cholangiograms are an aid in determining the status of the choledochal sphincter, the presence of overlooked stones, stricture and tumor, and the presence of pancreatitis or tumor of the pancreas, and also help determine when sufficient time has elapsed for biliary drainage. The choledochal sphincter is as a rule in a contracted state under spinal anesthesia. If drugs or diet can be used to control the spastic state of the choledochal sphincter without too much inconvenience to the patient, such surgical procedures as choledochoduodenostomy or sphincterostomy are not indicated.

Application Blanks Now Available for Space in Scientific Exhibit at Atlantic City Session

Application blanks for space in the Scientific Exhibit at the Atlantic City Session are now available. The Committee on Scientific Exhibit requires that all applicants for space fill out the regular form. Applications close February 1, 1937.

Blanks may be obtained from the Director, Scientific Exhibit, American Medical Association, 535 North Dearborn Street, Chicago.

ABSTRACTS : REVIEWS : COMMENTS and CORRESPONDENCE

SURGERY AND GYNECOLOGY

Abstracts, Reviews and Comments from
LeRoy Long Clinic
714 Medical Arts Building, Oklahoma City

A Clinical Review of 110 Cases of Ovarian Carcinoma. By Frank W. Lynch. *The American Journal of Obstetrics and Gynecology*, November, 1936, Page 753.

This is an analysis of one hundred and ten ovarian carcinomas, all primary growths, except two Krukenberg tumors. Two-thirds of the one hundred and ten ovarian carcinomas occurred in women between forty and sixty years of age.

Forty per cent of the patients gave the history of cancer in other members of the family. This is a rather high percentage of positive family history. In this connection, as controls, it is interesting that Dr. Lynch has studied the family histories of a number of women who had been operated upon for various gynecological complaints other than cancer. "A positive history of cancer in the family was given in 17.3 per cent of 1,045 women under thirty-five, in 25.3 per cent of 1,235 women from thirty-five to seventy-five years, and in 28.6 per cent of 600 women between forty-five and seventy-five years."

Nearly all series of ovarian carcinoma show a reasonably high percentage of unmarried women and a high incidence of sterility in married women. In this series twelve per cent of the patients had never been married and thirty-one per cent of the married women had never been pregnant.

"Five year cures were obtained only when the malignant areas were encapsulated by a cyst wall, or when the tumor was of low malignancy." A five year cure rate of thirty-five per cent was obtained in this series. However, Dr. Lynch, after a very careful scrutiny of the patients adds the following thought, which to a certain extent dispels the gratifying nature of the percentage of cures. "First, because many patients have been re-operated or re-radiated during a period in which they should not be re-treated but merely observed. Also because some of the slow growing tumors that had been re-treated might have been still present but unrecognized on examination after five years: yet later they might develop and cause death. Second, the cure rate depends largely upon the number of slow growing tumors in the series, important because years may pass before their metastases attack vital organs. For these reasons it is useless to attempt the evaluation of any method of treating ovarian cancer unless the patient has been followed for a minimum of ten years from the date of the last treatment. There are no reports as yet in the literature based on such thought."

There were three women who died of cancer subsequent to the five year follow up.

"The curative effect of roentgen ray therapy in ovarian tumors is much over-stated."

"The above review convinces me most firmly

that the profession erroneously credits too many cures of ovarian cancer to the roentgen ray. The agent has proved most helpful in a considerable number of advanced cases where the growth rapidly shrank in size and fluid was markedly decreased. Yet at least as many cancers did not respond at all. Moreover, if a patient remains well five or more years after the complete removal of the tumor and subsequent roentgen ray, the important factor in the apparent cure is not likely to be the radiation as many observers claim. More likely is it to be the complete removal of a cancer of low malignancy. By no means would I restrict the use of the therapeutic roentgen ray as adjuvant to surgery. We should always use it but keep an open mind concerning our results. We will learn facts more certainly and much faster if we follow all our cases through their entire period of survival after our treatment before we attempt to evaluate the factors responsible for cure. Only by so doing can we learn the laws that govern the growth of these cancers that now are an unknown factor in determining the frequency of so-called five-year cures."

In this series careful study of the microscopic sections did not support the theory that the histologic grading of the epithelial cells was of value in determining the radio-sensitivity of the tumor and the prognosis for the patient.

COMMENT: This is a splendid presentation of one hundred and ten ovarian carcinomas. While this is a reasonably small number, it must be remembered that this condition is not as frequent as some of the other malignancies of the pelvis. Dr. Lynch has attempted to make a very honest evaluation of the various factors in the treatment of this disease, and one's clinical experience with ovarian carcinomas leads him to agree in large measure with the deductions made. When carefully analyzed his remarks are not of a particularly skeptical nature but rather of an inquiring character. The percentages of results are good. He does not minimize in any way the tremendous palliative importance of roentgen ray therapy, or its possible curative powers in ovarian carcinomas.

Wendell Long.

A Bacteriologic Study of five hundred Consecutive Abortions With Treatment and Results. By T. K. Brown and George A Hunt, St. Louis, Missouri. *American Journal of Obstetrics and Gynecology*, November, 1936, Page 804.

The primary object of this study of five hundred consecutive cases of abortion is that of emphasizing the importance of anaerobic organisms. Uterine cultures were taken from all cases and were positive in sixty per cent. Anaerobic organisms were present in ninety-two per cent of the patients with positive cultures. The authors, therefore, conclude that the anaerobic organisms play a predominant role in the bacterial contamination of the uterine cavity following abortion.

This work was done in the St. Louis City Hospital but the authors point to the fact that it

checks very closely with the findings of the Department of Obstetrics and Gynecology of Washington School of Medicine.

Streptococcus hemolyticus was found as the infecting organism in only 1.8 per cent. However, its importance as a factor in mortality was considerable, 57.1 per cent.

There were a very small number of positive blood cultures, indicating its minor importance as a diagnostic sign. However, it is felt that it means much more as to prognosis.

These authors believe that the treatment should be early and active, with blood culture, gentle evacuation of the uterine cavity, followed by an intra-uterine douche. The routine followed in the active intervention in these five hundred cases is carefully described.

The period of hospitalization was very short, averaging 6.3 days after treatment.

There were seven deaths in this series and a table carefully giving the type of infecting organisms, the kind of treatment and the pathology is included in the article. The authors state that the cases coming to fatal termination were moribund upon admission.

COMMENTS: The problem of abortion is a universal and extremely important one. This is an excellent piece of work done in the bacteriology of abortions and demonstrates a surprising percentage of anaerobic organisms.

It is upon the basis of this finding that the authors recommend early active or what is sometimes called radical interference. Their results have been extremely good with a very low period of hospitalization and, judging from personal conversations with the authors, very little residual pelvic pathology. However, as has been mentioned in this section in commenting upon previous abstracts, there are certain cases in which early active treatment is most desirable but others which require decidedly more conservative care. In other words, under careful clinical observation a middle of the road attitude about treatment will unquestionably lead to better results when considered from all points of view. Wendell Long.

Management of Secondary Amenorrhea of Functional Origin. By Abraham B. Tamis, New York. *American Journal of Obstetrics and Gynecology*, November, 1936, Page 845.

A series of twenty-five cases of secondary amenorrhea of functional origin are reported.

The following quotation is an excellent concise picture of the accepted attitude toward this problem: "Attempts to re-establish the menses by the use of gonadotropic and estrogenic substances alone have not proved to be a panacea for this disorder. Better results have been obtained by the use of thyroid extract and by x-ray 'stimulation' of the ovaries and pituitary gland. Pelvic massage, dilatation of the cervix, dietetic regimes, and oral preparations of various internal secretory glands have also appeared to be effective in 'curing' amenorrhea.

One conclusion which may be drawn from the use of such varied therapeutic measures is that the mechanism of menstruation, while essentially controlled by the anterior pituitary gland and the ovaries, is not absolutely independent of other influences, which may be endocrine, physical, or even psychic in origin. This being true, better results should be obtained if the specific physiologic disturbance in an individual case could be ascertained in advance of treatment, and then to apply the therapeutic agent found most suitable for the particular disorder. It is unreasonable to expect

estrogenic hormone to be as effective in amenorrhea due to hypothyroidism as it is in underfunction of the ovaries. Likewise it is superfluous to use gonadotropic hormone in instances of ovarian failure since this substance is already present in excess in these cases."

It is also noteworthy that in examining these patients, "each case was carefully studied to exclude non-functional causes of amenorrhea, arising from pathologic states of the genital organs, from nutritional disorders, or from tuberculosis."

Most of the patients of this series had failed to respond to the usual therapeutic measures before they were seen by the author. Menstruation was restored and the regularity of menstruation greatly improved in sixty per cent of the series.

"The patients were classified according to their endocrine type and the status of their ovarian function. This was determined by noting physical stigmas of endocrine dysfunction, by the basal metabolic rate, and by hormonal analyses of the urine for estrogenic and gonadotropic hormones.

The prognosis for restoration of menstruation was best in those women with normal ovarian function, and poorest in those with ovarian failure.

The treatment regime, in any individual case, depended upon the group to which the patient conformed.

The procedures effective in the highest percentage of cases were desiccated thyroid extract (Armour) and x-ray 'stimulation' of the ovaries. Next in effectiveness were amniotin (Squibbs) and folutein (Squibbs)."

There is a long list of case histories and a complete discussion of the subject.

COMMENTS: One of the most interesting features of this article is the more sane and rational approach to problems of this character today than several years ago when much unbounded enthusiasm raged in the field of medication with the newer ovarian and pre-pituitary sex hormones. Today much greater effort is being extended to determine the specific physiological disturbance in an individual prior to treatment.

It is also interesting to observe that here as in many fields of endocrinology, thyroid medication remains the most reliable and definite agency available. Wendell Long.

A Brief Epitome of Gynecologic Endocrinology and Organotherapy. By Emil Novak, Baltimore, Md. *American Journal of Obstetrics and Gynecology*, November, 1936, Page 887.

As the title implies, this is truly a very brief but excellent article on "what the author considers a sort of minimum working basis for the clinician who would like to treat his cases of functional gynecological disease intelligently." I should like to recommend this article which is practically an abstract of the author's views itself as the most concise resume of the subject that I have seen.

Wendell Long.

Fewer Deaths From Gall-Bladder Disease. An Editorial by Henry F. Graham, *American Journal of Surgery*, November, 1936, Page 199.

Referring to the November, 1935, bulletin of the Metropolitan Life Insurance Company, in which the statement is made that next to appendicitis diseases of the gall-bladder are the surgical conditions of most serious character in connection with intra-abdominal surgery, followed by the statement that there had not been any improvement in the death rate in the last twenty-four years, Graham

bewails what appears to be unwise procrastination in connection with acute cholecystitis. He believes that this unfortunate situation is explained by the policy of watchful waiting in acute diseases of the gall-bladder, the operation being postponed in the hope that the inflammation will subside.

The results of the analysis of seventy-five cases of proved acute cholecystitis by Touroff, of the Mt. Sinai Hospital, are analyzed. In these seventy-five cases there was delay on the theory that the acute inflammation would subside. Touroff is quoted as saying, "advanced grades of inflammation may exist in the complete absence of clinical signs and symptoms."

The results of early operation, reported by Pratt from Wayne Babcock's clinic, are quoted. In this report it is indicated that there were no deaths when the operation was performed within forty-eight hours of the onset of the symptoms.

There is a rather scathing reference to the attitude of many members of the profession toward the proper handling of the patient who has a chronic gall-bladder. In that connection, Eliason is quoted as saying that early diagnosis today is showing that thirty-six per cent of patients with gall stones are under thirty-nine years of age. Bashein is quoted in connection with the analysis of one hundred and fifty-eight operations in which it was found that those with one or two attacks only showed a mortality of three per cent, while there was a mortality of 8.7 per cent when the patient had had more than two attacks. Referring again to the Metropolitan Life Insurance Company's statistics, the statement is made that they "show that beginning with the age of twenty years the death rate from gall-bladder diseases becomes appreciable and increases rapidly thereafter to the end of life."

The assertion is made that perforation of the gall-bladder is not uncommon, but that the diagnosis is not made very often, "even by surgeons of large experience." It is believed that the basic reason for the striking mortality is delay. "The death certificate may say pneumonia or myocarditis but these are only secondary to inanition and poor resistance to infection from prolonged gall-bladder disease."

The editorial is terminated by the statement: "Undoubtedly these results could be improved by our more accurate methods of diagnosis and by more prompt operation."

COMMENTS: It has not been long since I abstracted an article on this same subject, the abstract being published in the Journal. I wish to repeat here that the conclusions reached by the author of the editorial upon which this abstract is based, as well as by the author of the article abstracted a short time ago, correspond exactly with our conceptions of the situation. It is our deliberate judgment that, when the diagnosis is clear, there should be an early operation for acute cholecystitis; it is our deliberate judgment that when the diagnosis of chronic gall-bladder disease is established there should be no delay in operative procedures except the delay that might be necessary in order to properly prepare the patient for the operation. LeRoy Long.

Destruction of the Cerebral Cortex Following Nitrous Oxide-Oxygen Anesthesia. By K. Lowenberg and R. Waggoner, Ann Arbor, Michigan, and Thomas Abinden, Toledo, Ohio. *Annals of Surgery*, November, 1936, Page 801.

This article presents reports of fatalities after nitrous oxide-oxygen anesthesia that are striking, not to say sensational. The reports are striking and sensational because nitrous oxide-oxygen anesthesia has been regarded as very safe, notwith-

standing an occasional adverse report by different surgeons.

The authors say: "We are reporting three cases in which there was destruction of the cortex and basal ganglia following the use of nitrous oxide-oxygen anesthesia and one case with clinical evidence of a similar process."

The first case reported was that of a man aged twenty-two. There was a short nitrous oxide-oxygen anesthesia in connection with incision and drainage of an abscess of the finger. Twenty minutes after the beginning of the anesthesia there was sudden cessation of respiration, with rigidity and tremor of the extremities. The administration of oxygen helped a little, but the patient remained unconscious, and died approximately sixty hours following operation. Post-mortem examination showed hyperemia of the leptomeninges, and of the basal ganglia and brain stem, with scattered small hemorrhages. Microscopic examination of the cortex of the brain showed widespread destruction of the cells of the brain, some of the areas being in a "spongy state." There was more or less destruction throughout the various parts of the basal ganglia, the mid-brain and the cerebellum. "The cytologic changes of the neurons were of two types (a) shrinkage, (b) ischemic necrosis."

The second case was a white male, twenty-eight. The entering complaints were pain in right lower quadrant of abdomen with nausea and vomiting. There was an operation, presumably in connection with the appendix area, although that is not clear in the report. Nitrous oxide-oxygen anesthesia was employed, following hyoscin-morphin-cactoid hypodermatically one hour before operation. The authors say that "tablet No. 1" was administered. Since this combination has no definite ethical and scientific recognition, it is not clear as to just how much of the various agents was employed, but it is my recollection that the makers of the tablets designate No. 1 as containing morphine $\frac{1}{4}$ grain and hyoscin 1/100 grain.

After the administration of the nitrous oxide-oxygen mixture for approximately thirty minutes the respiration became shallow. Oxygen did not help. Respiration finally ceased. There was artificial respiration for forty minutes, and various stimulants, such as alpha lobelin, caffeine, atropin and coramine were administered, "without effect." The patient began to breathe after about forty minutes. "Oxygen-carbon dioxide was administered for two hours." The patient was comatose, developed stiff neck and convulsive movements of the jaw, and was very restless. Several hours later the temperature was 105.6, pulse 145, respiration 24. Two days after the operation there was a transient lucid interval when he asked for water, but about sixty hours after the operation the respiration was 60, pulse irregular, temperature 106, deep coma. Death occurred seventy-two hours after operation. The post-mortem showed that "the entire cortex and the basal ganglia were severely damaged." The general findings were much like those in case No. 1.

The third case was a hysterectomy for a fibroid uterus in a patient aged fifty-one. Nitrous oxide-oxygen anesthesia. There was sudden cessation of respiration an hour after the operation. There were many evidences of neurological disturbances, such as rigidity, restlessness, "risus sardonius." Death took place approximately one hundred and nineteen hours after the operation. The histologic findings were like those in the first two cases; that is, there was extensive destruction of the entire cortex of the brain.

The authors credit J. F. Baldwin for the first report in connection with the dangers of nitrous oxide-oxygen anesthesia, his report having been published in the Medical Record in 1916. There are

references in the article to various other surgeons who have made reports, and they are classified in the bibliography that follows the article.

LeRoy Long.

PLASTIC SURGERY

Edited by GEORGE H. KIMBALL, M.D., F.A.C.S.
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Necrosis of Cord Structures Following the Injection Treatment of Reducible Hernia. By Stephen A. Zieman, M.D., and T. M. Larkowski, M.D., Chicago. From *Journal A. M. A.*, November 7, 1936.

The authors point out that current literature has called attention to the injection treatment of hernia. The authors of these recent articles have given assurance of freedom from complications, simplicity of technique and extraordinarily good results.

The authors report a case treated by one injection of tincture of thuja solution given into the region approximating the right inguinal ring. The patient was fitted with a truss and sent home with instructions to return for a second injection. That evening, the entire right lower quadrant of the abdomen became discolored, intense pain developed which radiated down into the testicle. The scrotum swollen and painful, confined the patient to his bed and extreme discomfort forced him to discard the truss. Several days passed before he was able to walk. The ecchymosis and swelling having gradually disappeared, operation was recommended.

Two weeks later operation was done under ether at which time a green, gangrenous strip of tissue including fibres of the internal oblique and cremasteric muscles, the upper portion of the pampiniform plexus and the greater part of the cord was found. The vas deferens looked blanched, swollen and tortuous.

The authors described the removal of gangrenous tissue and repair of the hernia in approximately the usual manner. The patient made an uneventful recovery leaving the hospital in ten days.

COMMENT: This is one of the first complete reports revealing gangrene of a part of the abdominal wall following the injection treatment for hernia. No doubt there will be other reports describing a similar situation if the injection treatment becomes popularized. It is too early to entirely condemn the method altogether. I say this for the reason that some men who are surgeons have reported some good results by the injection method.

Personally, I have no intention of using injection treatment for the repair of hernia.

The Use of Fascia Lata in the Repair of Hernia. George V. Foster, M.D., F.A.C.S. S. G. & O., November, 1936.

The author points out the importance of adequate repair of hernia in industry, especially those represented by steel mills, railroads, and coal mines.

The ordinary indirect hernia in a young adult is a condition which need cause the average surgeon very little concern. There is, however, a group of hernias which, owing to the type of rupture, the age or obesity of the patient, the abdominal muscular development, and the type of work to which the man must return, must be considered separately, and due care and judgment must be exercised in their treatment. This comprises twenty to twenty-five per cent of all adult hernias which come to the attention, and they are the type with which this paper essentially deals.

Indications: 1. Direct inguinal hernias.

The author states that he has been able to satisfactorily correct direct inguinal hernias by the use of fascia lata. He states that all direct inguinal hernias do not need the support of fascia. He points out that the small bubonocoele type, and in people of sedentary occupations, the use of fascia is usually not needed. However, in men who expect to do hard work the indication for fascia is present.

2. Large indirect inguinal hernias.

This type of rupture in a patient past middle age in a strenuous occupation needs the soundest repair possible.

3. Recurrent inguinal hernias, direct or indirect.

The author states that if a hernia remains repaired for two years and then a lump appears at the site of the original operation it would be considered a new hernia. Those in which a sac has been removed and yet a hernia occurs within a few months, need the addition of fascia in their repair, because obviously the muscles of the posterior wall are too weak to stand the necessary strain.

4. Ventral hernias (incisional).

The post-operative hernias, especially following suppurative of the abdominal incision, usually have a wide defect and need all the reinforcement possible.

TECHNIQUE: The author points out in detail the use of fascia, well illustrated so that it is easy to follow.

RESULTS: The author has a series of one hundred and one cases, seven recurrences accounted for by December, 1935, which is eighteen months after the last operation. Some of the cases were men over sixty years of age and in some of them had had two previous operations.

COMMENT: The author is to be complimented on a clear cut description of the indications for the use of fascia lata. Also his description of the technique employed is easy to follow.

Many surgeons fail to use the fascia even in large hernias, because it is extra work to secure the fascia and to use it as a suture.

However, I believe that the direct hernia of moderate size, the large indirect inguinal hernia, especially in middle age, as well as the recurrent hernia and the incisional hernia, should be given the benefit of the use of fascia.

It is interesting to note that the men who have their own team and operating room are able to use this type of operation more than the surgeon who must schedule a case for a hernia and therefore is usually expected to be out within an hour so that another case can be begun.

ORTHOPAEDIC SURGERY

Edited by Earl D. McBride, M.D., F.A.C.S.
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The Selection of the Anaesthetic in Cases of Fracture of the Jaw. H. H. Weisengreen, D.D.S. Jr. *Bone and Joint Surg.*, Vol. XVIII, No. 4, October, 1936.

The writer points out that the circumstances are very unfortunate when fractures of the jaw are treated by procedures of routine anesthesia because the involved area will almost invariably affect, directly or indirectly, either the alimentary or the respiratory tract or both; therefore, the anesthetic should be selected so that it will create

the least embarrassment to the normal functioning of these tracts, and at the same time be effective enough to permit the operation without suffering on the part of the patient. A stormy post-anesthetic period will greatly impede recovery. He does not recommend general ether or gas anesthesia when wiring of the jaws is necessary because vomiting may be a complication that will disturb the fixation and it is much more difficult to secure normal occlusion. A patient may swallow his tongue, there is also danger of pneumonia.

When he does use ether anesthetic he places the eyelet wires in their respective positions around the teeth, but does not apply the complete inter-maxillary fixation until the patient regains consciousness and has recovered from the anesthetic.

In uncomplicated cases Dr. Weisengreen uses local anesthetic consisting of one per cent solution of novocain injected high in the mucobuccal fold in the region of operative activity.

Cases in which general anesthesia must be used instead of local are particularly those of delayed fibrous union, or where extensive surgery of the bone and soft tissues is required. Local anesthetic is also definitely contra-indicated where infection has occurred as it may carry the infection into the deeper soft-tissue structures and also endanger the bone itself. In such cases the writer uses ether, rectal avertin and a combination of avertin with novocain. He thinks rectal avertin is preferable for the following reasons:

1. The anesthetist is out of the operative field;
2. Respiration is regular and normal;
3. Reduction is accomplished without untoward results which follow the use of an inhalation anesthetic;
4. There is early relaxation of the muscles of the jaw and tongue;
5. The supplemental employment of an inhalation anesthetic is avoided;
6. The dangers of explosion connected with the use of the cautery are obviated.

Where ether must be used as an anesthetic, the items of direct significance in regard to the patient are:

1. Possible asphyxia and suffocation caused by swallowing the tongue, or by the mouth and stomach secretions in the respiratory tract;
2. Greatly increased salivary secretion;
3. Possibility of cyanosis produced by faulty position of the head;
4. Effect of cough reflex on aspiration, gagging, etc.;
5. Post-operative shock and fatigue;
6. Danger of pneumonia;
7. Impossibility of confining effects of anesthesia to regional parts;
8. The extended time factor in recovery caused largely by effects and consequences of post-operative vomiting. Not only is the systemic reaction to ether involved, but the retching and struggling with the jaws immobilized may necessitate the immediate cutting of the tie wires.

Treatment of Malum Coxae Senilis, Old Slipped Upper Femoral Epiphysis, Intrapelvic Protrusion of the Acetabulum, and Coxa Plana by Means of Acetabuloplasty. M. N. Smith-Peterson, M.D. *Jr. Bone and Joint Surg.*, Vol. XVIII, No. 4, October, 1936.

The author sought to solve the problem of what to do for the patient where there is unilateral or bilateral ankylosis of the hips where there is still

some motion, but where there is bony impingement of a protruding acetabular rim on proliferative bone lipping about the head of the femur, such as is usually seen in *malum coxae senilis*.

He devised an original procedure in which he eliminated the impingement of the two regions by a plastic procedure of removal of the anterior wall of the acetabulum. He found at the first operation that the results were very spectacular and since it was one that did no harm, he continued until he now reports eight cases with very favorable results.

Operative technique: Incision extends along anterior third of the iliac crest to the anterior superior spine, then curves slightly medially along the lateral border of the sartorius muscle. Immediately inferior to the anterior superior spine one finds the plane of division between the sartorius and the tensor fasciae femoris. The femoral fascia is incised along the lateral border of the sartorius, exposing the direct head of the rectus femoris. By sharp and blunt dissection the attachment of the direct head of the rectus femoris to the anterior inferior spine is defined.

The plane of division between the iliopsoas muscle and the proximal portion of the reflected head of the rectus femoris is then identified. The iliopsoas muscle is retracted mesially, exposing the anterior intrapelvic wall of the acetabulum. The direct head of the rectus femoris is divided in order to give better exposure to the lateral portion of the acetabulum. When the distal portion of this muscle is retracted, the reflected head of the rectus comes into view and is attached to the anterior acetabular margin. It is dissected free and retracted laterally with the direct head of the rectus femoris.

In some cases the iliopsoas muscle remains too taut to be retracted. In such case it is advisable to reflect subperiosteally the origin of the sartorius and the abdominal oblique muscle from the anterior crest of the ilium, exposing the anterior portion of the iliac fossa. The anterior acetabular wall is then cut away with a thin osteotome or gouge. The osteotomy starts just below the attachment of the direct head of the rectus femoris and is carried mesially a distance of approximately an inch and a half and is then curved inferiorly down to the cotyloid notch. It is lifted out and leaves a good exposure of the articular surface of the head of the femur and of the anterior aspect of the neck.

By making tests of moving the hip in various directions it is determined if sufficient bone has been removed to permit free motion. He has found little danger of dislocation anteriorly of the head of the femur. Post-operative convalescence is remarkable because of the relative absence of pain. The extremity is suspended with five pounds of traction to overcome muscle spasm and diminish pain. The position should be one of extension with maximum abduction and maximum internal rotation. At the end of two weeks the patient is up on crutches and the maximum hospitalization is four weeks.

EYE, EAR, NOSE AND THROAT

Edited by Marvin D. Henley, M.D.
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Cataract Extraction Through a Vertical Slit. Walter Moehle, M.D., Brooklyn. *Archives of Ophthalmology*, October, 1936.

Some of the first advocates of subconjunctival cataract extraction were Alexander in 1825, Des-

marres in 1851, Von Hasner in 1873, Pansier and Vacker in 1899, Czermak, Dimmer in 1907 and Cluckie in 1909. Czermak thought this method suitable in cases where there was a possible loss of vitreous during the operation or due to dementia, excitement, dislocation of the lens into the anterior chamber or over-ripening, or post-operative, because of gaping of the wound due to great restlessness, violent coughing, etc.

The method is described in detail. Before operation, he has a general physical examination, a blood chemistry, an examination of the sinuses, teeth and tonsils, Wasserman, urinalysis, lacrimal duct examination, conjunctival smears, an hour before operation one per cent silver nitrate instillation, facial nerve block (O'Brien or Van Lint), and anaesthesia with two per cent butyn in the conjunctival sac every two minutes for five doses.

To avoid injuring the blood supply of the conjunctiva, a vertical incision is made beginning about five mm. from the upper limbus and ending about fifteen mm. from the upper limbus. Using iris scissors the conjunctiva is freed down to about the middle of the cornea, both on the nasal and temporal side. The result is two large pockets of conjunctiva well loosened with the total vertical incision amounting to about twenty mm. This, according to the author gives ample room for all the necessary manipulations of the operation. Sutures are inserted in each lip of the incised conjunctiva about five or six mm. from the limbus and these serve as a means of lifting the conjunctiva out of the way so that it will not interfere during the operation. An assistant is used to keep the conjunctiva elevated by means of these two loops. The corneal incision is made with a keratome and further enlarged with de Wecker scissors until ample room is provided. With the assistant still holding the conjunctiva up, the routine iridectomy and capsulotomy are done. The lens is delivered by pressure on the lower part of the cornea and counterpressure above the corneal incision on the sclera between the conjunctival lips. While this is being done the patient constantly looks down and the assistant keeps the conjunctiva elevated. The anterior chamber is irrigated to remove any cortical remains not delivered with the lens. A spatula is used to replace the pillars of the iris. The two sutures are now withdrawn allowing the conjunctiva to be replaced on the cornea. The edges of the conjunctival wound may be brought together with a forceps. The author does not use a stitch here but it is not contra-indicated if the operator wishes to use one. Within twenty-four hours the edges of the wound are firmly stuck together and the anterior chamber is reclaimed. As outlined by the author this method has several advantages.

Some Observations on Facial Nerve Palsy. James A. Babbitt, M.D., Philadelphia. *Annals of Otolaryngology, Rhinology and Laryngology*, September, 1936.

The work along this line of the late Sir Charles Ballance and Arthur Duel is given suitable credit and observation. A historical review of the subject is given. According to this the outstanding men on the other side were Sir Charles Bell, Sir Charles Ballance, and Sir Harold Gillies; here, Harvey Cushing, Arthur Duel, Vilray Blair and Eastman Sheehan are mentioned.

The development and progress of this work is divided into four definite periods of history by the author.

The first period had to do with the early studies on the etiology and nature of seventh nerve function and its loss.

The second period was when a union of the distal segment of the facial nerve with the spinal

accessory, hypoglossal and other motor branches in the neck was attempted.

The third period was when facial and muscle transplants were used to overcome facial distortion and nerve regeneration at this time was discussed.

The fourth period brought about the nerve transplants to the injured portion of the fallopian canal.

Two cases are reported. The first patient was a male, age twenty-three, with a total facial palsy of the left side. The patient came under observation because of a cavity behind the auricle resulting from a mastoid operation. This was remedied by Almour's method. A large circular flap cut from the temporal muscle was swung down, inverted, into the freshened wound, with its temporal pedicle unimpaired. Undercut flaps of skin covered this transplant. The presence of a suppurative discharge from the ear retarded healing. However, four months after operation the patient noted that there was an increased movement of the face. This has continued to improve over a period of two and one-fourth years.

The second patient was a female, age forty-five. The face was deformed, left eye continually open, hearing decreased about eighty per cent on the affected side. This condition had been present for about twenty-five years following a mastoid operation. A strip of temporal muscle and fascia was brought in contact with the orbicularis oris, by tunneling under the skin, and sutured. Another strip from the same source and in the same manner was sutured to the orbicularis palpebrarum, at the inner canthus of the left eye. There was another operation on this patient which placed a strip of fascia lata from the upper lip and a similar one from the lower lip to the temporal region. Eight months later there showed a steady gain in muscular movement in the temporofacial area.

There is quite a discussion in regard to the principles involved in the process of regeneration.

A bibliography is appended.

Vasomotor Rhinitis: Evaluation of Therapeutic Procedures with Special Reference to Ionization. A. R. Hollender, M.D., F.A.C.S., Chicago. *The Eye, Ear, Nose and Throat Monthly*, November, 1936.

This is an able recapitulation of this debatable subject by a competent man.

Allergy is discussed and the accepted standard of allergy is given as "only that phenomena which shows the sequence of allergen-antibody-reaction." Many allergists class vasomotor rhinitis in this group but in practice often this cannot be proven. A confusing factor in the diagnosis many times is the presence of a multiple sensitivity. When the so-called specific treatment fails, the author groups the forms of non-specific treatment as follows:

1. Systemic—
 - A. Metabolic.
 - B. Pharmacal.
 - C. Endocrine.
 - D. Dietetic.
 - E. Residential.
2. Topical—
 - A. Medical (medicinal applications, irrigations, sprays, injections into the turbinates, chemicals, chemical cauterization of the inferior turbinates).
 - B. Surgical (injection into the sphenopalatine ganglion, removal of septic obstructions, thermocauterization of the nasal mucosa).

C. Physical (massage, diathermy, phototherapy, electrolysis of inferior turbinates, ionization).

The author gives his technic which may be carried out with a comparatively inexpensive equipment. He prefers the use of a simple solution of two per cent zinc sulphate in distilled water.

Dr. Hollender's comprehensive summary and conclusions are as follows:

1. Our present-day therapy of allergic conditions must still be regarded as empiric in character.
2. Through the initiative of Doerr we recognize only those phenomena as allergic which show the sequence of allergy-antibody-reaction.
3. The failure to establish in many cases of vasomotor rhinitis an allergic basis has led to the proposal of two principal theories: one, that vasomotor rhinitis is strictly a local condition; the other, that it is a local manifestation of a systemic disease.
4. In every suspected case of vasomotor rhinitis every general, local and laboratory diagnostic procedure must be utilized.
5. Specific immunization should be tried in every case in which the offending allergen can be demonstrated; or at least it should be kept from contact with the patient whenever at all possible.
6. Whenever surgical intervention is indicated, it should be resorted to, for the tendency to avoid nasal or sinus operations in the presence of vasomotor rhinitis is fallacious.
7. Of all non-specific methods of treatment which have been employed in vasomotor rhinitis, zinc ionization has proven clinically very valuable as a palliative of prolonged effectiveness.
8. Histopathologically, the nasal mucous membrane subjected to zinc ionization shows initial destructive changes with subsequent regeneration of the surface epithelium but with a persistent absence of cilia.
9. While effects similar to those of ionization can be obtained with other local measures, ionization possesses definite advantages over them.
10. Ionization is only occasionally of benefit in seasonal hay fever and in certain cases of asthma, but merits a trial, especially after our regular therapeutic armamentarium has been exhausted.

COMMENT: Ten years ago Dr. Hollender published "Physical Therapy in Diseases of the Eye, Ear, Nose and Throat." This was among the first, if not the first, book of its kind published. His conclusions are not the result of a few years observations but are arrived at by many years of intensive work in this particular field.

Follow-Up of Patients Eight Months After Tonsillectomy. Harold D. Smith, M.D., Boston. *Archives of Otolaryngology*, October, 1936.

This interesting article does not lend itself to abstracting. It is really a continuation of his article in the *Archives of Otolaryngology*, April, 1935, entitled "Microscopic Pathology of the Palatine Tonsil." In this current edition he has a recapitulation of his previous work. His summary of the present article is as follows:

A correlation of the history leading to the tonsillectomy, the pathologic diagnosis of the tonsils

and the subsequent clinical course over a period of eight months is presented.

From this study it appears that in a routine group of patients the percentage of persons who give evidence by history and (or) clinical examination of infected tonsils should be between eighty-five and ninety. In this series the microscopic examination of the slides revealed eighty-six per cent to have had tonsils with a pathologic change and fourteen per cent to have had normal tonsils.

Tonsillectomy and adenoidectomy have proved beneficial in cases in which a focus of infection was suspected in the tonsils and in which there was a history of recurrent colds and sore throat, aural involvement, nasal obstruction, cervical adenitis and enlarged tonsils. The procedure seems to be of questionable value in cases of indigestion, laryngitis and pain in the throat.

The so-called immediate results of tonsillectomy, as noted in this study, are compared with the less favorable results after a period of ten years, as shown by the figures of Dr. Albert D. Kaiser. Dr. Kaiser reported 72.22 per cent improvement in the incidence of sore throat in his patients on whom tonsillectomy was performed, and 12.19 per cent improvement in the controls, while 81.96 per cent of my patients reported improvement in the incidence of sore throat eight months post-operatively. There was a fifty per cent improvement in the incidence of colds in Dr. Kaiser's patients and 24.39 per cent in his control children, and 90.16 per cent of the patients in my series reported improvement. Only 66.66 per cent of Dr. Kaiser's children who had a tonsillectomy showed improvement in the incidence of aural involvement. All the patients of the present series claimed improvement, i. e., one hundred per cent. Likewise, one hundred per cent of the patients in this series with cervical adenitis were improved, while there was improvement in only 53.33 per cent of Dr. Kaiser's patients on whom tonsillectomy was performed. However, those in the control group reported one hundred per cent increase in the incidence of the complaint. There was failure in one hundred per cent of the patients with laryngitis in my series, which corresponds to the increase of one hundred per cent in the incidence of laryngitis among those in Dr. Kaiser's control group. His tonsillectomized patients showed an increase in the incidence of laryngitis of 166.66 per cent.

While I have no sympathy with the promiscuous "slaughter of the tonsil," I have become firmly convinced that such a term is not justifiable if the physician has taken the history carefully and has made a thorough clinical examination, which has revealed infected tonsils.

A Suggested Routine Technique for Emergency Tracheotomy. Dr. Wm. B. Chamberlin, Cleveland. *The Laryngoscope*, October, 1936.

This author is one who still considers a tracheotomy on a youngster with a short, fat, thick neck a difficult operation. Usually when done for the relief of an acute laryngeal obstruction, the operation is performed under the most trying situations. The result is many poorly executed operations and a high percent of mortality. An intubation tube or bronchoscope, if available, and the difficulty of introduction not too great, gives the choking patient the necessary air while the surgeon performs a more deliberate tracheotomy. The author is of the opinion that the so-called life saver of Mosher gives the most satisfactory results under all conditions, it being easily inserted in either the erect or reclining position, and giving sufficient breathing space until a tracheotomy can be done. It is

inserted in the same manner as the intubation tube except there is no introducer.

With adults the author uses a small dose of morphine and then procaine with epinephrin for infiltration. When the trachea is exposed he injects a few drops of two to four per cent solution of cocaine into the lumen of the trachea. After waiting about five minutes to give the cocaine time to take effect, the trachea is opened either between the rings or by cutting directly across one of them. In the older patients where a large tube is going to be used he advises resection of a portion of the tracheal ring to prevent undue pressure from the tube. Morphine is not used in children.

Tragical and near-tragical experiences of the author and his colleague, Dr. C. E. Pitkin, are related.

Sir St. Clair Thomson is quoted by the author as enumerating the following accidents which may attend a tracheotomy.

1. The opening in the trachea may not be made in the midline.
2. If the opening is incomplete, the cannula may take a false passage for itself beneath the mucous membrane.
3. If the knife is not held carefully, it may not only open into the windpipe but traverse the opposite side.
4. The trachea may be entirely incised and the esophagus or some other structure opened by mistake.
5. The cannula may fail to enter the wound in the trachea and may slip down in front of it and below the fascia.
6. The tube may be of the wrong shape or size, or its orifice may become occluded by membrane or blood.
7. There may be difficulty in introducing the cannula. Clumsy efforts should never be made but the trachea held open with two sharp hooks; I often use three.

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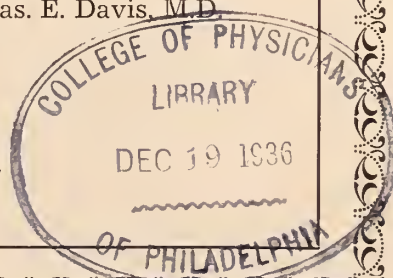
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